

Pt 1 - Sewage  
Treatment Plant

342 High St., Box 471  
Flushing, OH 43977  
Ph: (740) 968-4947  
Fax: (740) 968-4225  
Email: hamilton@1st.net  
www.hamiltonandassoc.com



Civil Engineering  
Land Surveying  
Mine Permitting  
GIS Data Services  
Land Development  
Global Positioning Systems

January 11, 2002

Ms. Melanie Homan  
American Energy Corporation  
43521 Mayhugh Hill Road, Township Highway 88  
Beallsville, Ohio 43716

RE: Sanitary Sewer Permit Submittal

Dear Ms. Homan:

The attached items are copies of the original submittal documents, plan drawings and approval letters for the sanitary sewer system - as you requested. Please refer to the following list of enclosed items:

1. One set of the approved project drawings CS, C1-C3 and PC1-PC7
2. PTI Form A with Fee Check
3. PTI Supplemental Form B1 - For Pump Station A
4. PTI Supplemental Form B1 - For Pump Station B
5. PTI Supplemental Form B3 - For 10,000 GPD Treatment Plant
6. One set of the sanitary sewer testing specifications and pump data sheets and specifications
7. PUCO Form
8. Addendum to PTI Supplemental Form B3, Item #7 - Pond 11 Water Usage Letter
9. Ohio EPA Response Letter dated September 18, 2001
10. Jack A. Hamilton & Associates, Inc. Response Letter dated October 1, 2001
11. Jack A. Hamilton & Associates, Inc. Response Letter dated October 18, 2001
12. Ohio EPA Report on PTI dated November 9, 2001
13. Ohio EPA Approval of PTI Letter dated November 21, 2001
14. 8 1/2" x 11" Copy of "Approval" stamp from Sheet CS

Please call if you need any additional information or have any questions, please call.

Sincerely,

Ray L. Luyster

# LETTER OF TRANSMITTAL

(740) 968-4947  
FAX (740) 968-4225

TO OHIO EPA SOUTHEAST DISTRICT OFFICE  
2195 FRONT STREET  
LOGAN, OHIO 43138

DATE	MAY 10, 2001	JOB NO.	6255
ATTENTION	MS. ABBOT STEVENSON		
RE:	CENTURY DEEP MINE		
	BEALLSVILLE, BELMONT COUNTY, OHIO		

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via US MAIL the following items:

- ☐ Shop drawings ☐ Prints ☒ Plans ☐ Samples ☒ Specifications  
☐ Copy of letter ☐ Change order ☒ SEE BELOW

COPIES	DATE	NO.	DESCRIPTION
1 SET			PROJECT PLAN DRAWINGS CS; C1-C3; PC-1 - PC-5
1			PTI FORM A w/FEE CHECK
1			PTI SUPPLEMENTAL FORM B1 - FOR PUMP STATION A
1			PTI SUPPLEMENTAL FORM B1 - FOR PUMP STATION B
1			PTI SUPPLEMENTAL FORM B3 - FOR 10,000 GPD TREATMENT PLANT
1 SET			JANITARY SEWER TESTING SPECIFICATIONS & PUMP DATA/SPECS.
1			PUCO FORM, IF REQUIRED

THESE ARE TRANSMITTED as checked below:

- ☒ For approval ☐ Approved as submitted ☐ Resubmit \_\_\_\_\_ copies for approval  
☐ For your use ☐ Approved as noted ☐ Submit \_\_\_\_\_ copies for distribution  
☐ As requested ☐ Returned for corrections ☐ Return \_\_\_\_\_ corrected prints  
☐ For review and comment ☐ \_\_\_\_\_  
☐ FOR BIDS DUE \_\_\_\_\_ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS PLEASE REVIEW THE ENCLOSED PACKAGE AND CONTACT ME WITH ANY COMMENTS OR QUESTIONS.

PLEASE NOTE THAT AS SOON AS THE SURFACE STORM WATER CONTROLS ARE FINALIZED, I WILL SEND YOU A MAP OF THE SITE WITH THESE ITEMS LABELED AND DESCRIBED - AS YOU REQUESTED.

THANK YOU,

COPY TO FILE

SIGNED:

*Roy L. Longster*

If enclosures are not as noted, kindly notify us at once.

# OhioEPA

A

## Ohio Environmental Protection Agency Permit to Install/Plan Approval Application

### FOR AGENCY USE ONLY

Date Received: \_\_\_\_\_ Application Number: \_\_\_\_\_ Basin Code: \_\_\_\_\_  
Check Date: \_\_\_\_\_ Check Number: \_\_\_\_\_ Check Amount: \_\_\_\_\_

1. Project Name:

Century Deep Mine

2. Applicant:

Name: American Energy Corporation

Mailing Address: 43521 Mayhugh Hill Road

City: Beallsville

State: Ohio

Zip: 43716

Contact Name: Mr. Eric Grimm

Title: Operations Superintendent

Phone: (740) 926 - 9152

Fax: (740) 926 - 9138

3. Application/Plans Prepared by:

Name: Jack A. Hamilton & Associates, Inc.

Mailing Address: 342 High Street, P.O. Box 471

City: Flushing

State: Ohio

Zip: 43977

Contact Name: Donald M. Brafford

Title: Civil Engineer

Phone: (740) 968 - 4947

Fax: (740) 968 - 4225

4. Billing Address (if different than Applicant):

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_

Zip: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Title: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_

Fax: ( ) \_\_\_\_\_

5. Owner (if different than Applicant):

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_

Zip: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Title: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_

Fax: ( ) \_\_\_\_\_

6. Project Location:

Street Address or Location Description: Section 3, T. 6N, R5W

County: Belmont

Township/Municipality Wayne Township

Latitude: 39° 53' 42.4"

Longitude: 81° 01' 23.8"

Method of Determination Delorme 3D Topo Quads

## 7. Brief Project Description:

The project involves the reopening of the existing deep mine at the site. Two new bathhouses are proposed. Two pump stations are proposed and one 10,000 gpd. sanitary treatment plant is also proposed.

Will five acres or more be disturbed during construction of this project? ☐ Yes ☒ No

8. a. Is this application part of a combined permit to install application? (e.g. Air + Water) ☐ Yes ☒ No

b. Has an application for a Class V injection well Permit to Install been submitted? ☐ Yes ☒ No

If yes, date submitted: \_\_\_\_\_

9. Is this application for the construction or installation of a private sewage disposal system as specified by Ohio Revised Code (ORC) 6112.02? ☒ Yes ☐ No

If yes, have you applied for and obtained a certificate of public convenience and necessity from PUCO as specified by ORC 6112.03? ☐ Yes ☒ No

## 10. Compliance Status

a. Does this facility have a NPDES permit? ☒ Yes ☐ No

If yes, permit numbers: OH 0059552 OIL 00091 Storm: OGR00014

b. Is this application filed in compliance with findings and orders, a consent decree, and/or NPDES permit schedule?

☐ Yes Effective Date of the document containing the schedule: \_\_\_\_/\_\_\_\_/\_\_\_\_

☒ No

11. Have pollution prevention concepts been considered for this project? ☐ Yes ☒ No

If yes, please describe (attach additional pages if necessary):

## 12. Estimated Project Schedule:

Beginning construction date: 08 / 27 / 2001

Ending construction date: 09 / 28 / 2001

Beginning operation date: 10 / 01 / 2001

## 13. Project Cost:

Installation/Construction Cost: \$ 146,000

(Mark One): Actual ☐ Bid ☐ Estimate ☒

Annual Operation/Maintenance Cost (if applicable - this project only) \$ 18,000

Are Water Pollution Control Loan Funds going to be used for this project? ☐ Yes ☒ No

If no, Funding Source: American Energy Corporation to fund independently

14. Attachments. The following are included in this application package ( indicate how many copies of each are provided):

4 Detail Plans  
       Engineering Report  
4 Engineering Specifications

       Management Plan  
       Hydrogeologic Site Investigation Report  
       Other (describe): \_\_\_\_\_

15. Form B Submission (check all that apply)

<input type="checkbox"/> Sewer and Pump Station Construction	Form B1
<input type="checkbox"/> On-Site Sanitary Wastewater Disposal	B2
<input type="checkbox"/> Wastewater Treatment Plants Less Than 100,000 GPD	B3
<input type="checkbox"/> Wastewater Treatment Plants Greater Than or Equal to 100,000 GPD and all Pond Systems	B4
<input type="checkbox"/> Industrial Direct Discharge Facility	B5
<input type="checkbox"/> Industrial Indirect Discharge Facility	B6
<input type="checkbox"/> Underground Storage Tank Remediation	B7
<input type="checkbox"/> Livestock Waste	B8
<input type="checkbox"/> Land Application or Sludge Management Plan	B9

16. Fee Calculations:

Permit to Install (maximum total fee \$15,100)

a. Application fee:	\$ 100.00
b. Plan review fee:	\$ 100.00
c. Plan review fee (installation/construction cost x .0065):	\$ 949.00
d. Total Fee (a + b + c):	\$ 1,149.00

Land Application\*/Livestock Plan Approval

a. Application fee:	\$ 0
b. Plan review fee:	\$ 0
c. Total fee (a + b):	\$ 0

\*No separate fee is needed for land application of treated wastewater if the management plan is submitted as part of the PTI application system installation.

17. Signature of the Applicant: (see Ohio Administrative Code 3745-31-04)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision and that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are substantial penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Typed name: Mr. Eric Grimm  
 Title: Operations Superintendent  
 Signature: *Eric S. Grimm*  
 Date: 5/10/01

JACK A. HAMILTON AND ASSOCIATES, INC.  
CONSULTING ENGINEERS AND SURVEYORS  
BOX 471  
FLUSHING, OH 43977

10788

69-119/434

DATE May 10, 2001

PAY TO THE ORDER OF Treasurer, State of Ohio \$ 1149.00

One thousand one hundred forty-nine and  $\frac{00}{100}$  DOLLARS

WHEELING NATIONAL BANK  
FLUSHING BRANCH  
FLUSHING, OH 43977

FOR Bennac sewer plant

Jack A. Hamilton

⑈010788⑈ ⑆043401190⑆ 2552451E⑈01



**Ohio Environmental Protection Agency**  
**Permit to Install/Plan Approval Application**  
**Sanitary Sewer and Pump Station Construction**

AGENCY USE ONLY

Application Number \_\_\_\_\_

Date Submitted \_\_\_\_\_

Applicant: American Energy Corporation  
 Facility Owner: American Energy Corporation  
 Ultimate owner if different: \_\_\_\_\_  
 Application/Plans Prepared by: Jack A. Hamilton & Associates, Inc.  
 Project Name: Century Deep Mine - Pump Station A

**1. Project Description**

- a. Describe the location, size, and current development of the area to be served. List street address, township, county, and include longitude and latitude coordinates in describing location.

The site is the former Allison deep mine. The ODNR surface mine permit is approximately 46 acres in size. The site is located in Section 3, T-6N, R-5W, Wayne Township, Belmont County, Ohio.  
Latitude: 39° 53' 42.4" Longitude: 81° 01' 23.8"

- b. What is the possibility that future sanitary sewer extensions will connect to the sanitary sewers which are the subject of this application?

There will not be any future connection to the system due to its location and the fact that the system will be used only to service the deep mine facility.

- c. Are there any pump stations included as part of this sewer construction?  
 (If No, skip items 14 through 22 for pump stations)

Yes ☒ No ☐

- d. Indicate type(s) of sewers proposed (check all that apply):

☒ Conventional gravity

☐ Small diameter gravity

☐ Pressure (GP or STEP)

☐ Vacuum

☐ Siphon

☒ Force main

**2. Pipe Specifications:** Please identify each type (as indicated in 1d above) and size of pipe included in this project.

Type	Pipe Size	Pipe Material	Material Specification	Joint Specification	Bedding Classification	Minimum Slope	Pipe Length	Maximum Manhole Spacing
Force Main	2"	PVC	ASTM D2241 SDR21 CL200	ASTM D3139 ASTM DF477	ODOT 603.04 Class C	N/A	2890	N/A
Gravity	8"	PVC	ASTM D3034	ASTM D3212	ODOT 603.04 Class B	0.4%	290	130'

\* List ASTM, AWWA, or ANSI specification number.  
 \*\* 100 percent to pass 3/4 inch sieve. ASTM C-12 (A, B, C), D-2321 (IA, IB, II, III), or other.



## 3. Design Flow in Proposed Sewer

Identify flows expected at start up (i.e., currently existing flows) and the flows expected at design (i.e., currently existing flows plus flows from future development) at terminus of proposed sewer.

	Average Daily Flow	Peak Hourly Flow
Start Up Flows (based on immediate area served)	N/A MGD	N/A MGD
Design Flows (based on planned area served)	0.0093 MGD	0.0042 MGD
Hydraulic Capacity of Sewer		0.010 MGD

Assumptions used to calculate above flows	Start-up	Design
Residential Population at <u>35</u> gal/cap./day	265 people	265 people
Non-Residential Flows (i.e., commercial, industrial, etc.)	0.0093 MGD	0.0093 MGD

## 4. Receiving Wastewater Treatment Facility

- a. What treatment facility will be receiving flow from these sewers? Proposed 10,000 GPD on site plant

Present treatment facility average daily flow N/A MGD (based on \_\_\_\_\_ (month) 19 \_\_\_\_ ADF)

Proposed treatment facility average daily flow N/A MGD (based on present average daily flow plus all connections currently under construction or being designed)

Design average daily flow of the treatment facility 0.009275 MGD (based on 2001 design year)

- b. Does the treatment facility have adequate capacity to treat anticipated flow from existing sewers plus the proposed sewers based on the sewer's design capacity? Yes ☒ No ☐

If No, please describe the steps being taken to ensure that the treatment facility has adequate capacity (on a separate sheet). Include specific work items and schedules as appropriate.

- c. Is there an intent to expand the treatment facility to treat additional flow? Yes ☐ No ☒

## 5. Connections to Existing Sewers and Pump Stations

- a. Will the proposed sewer be connected to an existing sewer? Yes ☐ No ☒

If Yes,

1. What is the current peak flow in the existing sewer at the point of connection? \_\_\_\_\_ GPM

2. What is the design peak capacity of the existing sewer at the point of connection? \_\_\_\_\_ GPM

3. What type of sewage does the existing sewer carry? combined ☐ sanitary ☐

4. Does the existing sewer have the capacity to handle design flow from the new sewer without creating or worsening (existing CSOs only) any overflows, bypasses, or other operational problems downstream of the new sewer connection point? Yes ☐ No ☐

## 5. Connections to Existing Sewers and Pump Stations, cont.

b. Will be proposed sewer be connected to an existing pump station?

Yes

No

☐☒

If Yes,

1. With the largest unit out of service, what is the current peak flow in the pump station at the point of connection?

\_\_\_\_\_ GPM

2. With the largest unit out of service, what is the design peak pumping capacity of the pump station at the point of connection?

\_\_\_\_\_ GPM

3. What type of sewage does the existing pump station transport?

combined

sanitary

☐☐

4. Does the existing pump station and sewer downstream of the pump station have the capacity to handle design flow from the new sewer without creating or worsening (existing CSOs only) any overflows, bypasses, or other operational problems downstream of the pump station discharge?

Yes

No

☐☐

c. Are there any overflow or bypasses upstream of the point of connection that may be impacted by the flows from the new sewer?

Yes

No

☐☐

d. Are there any sanitary overflows or bypasses or combined sewer overflows downstream of the point of connection?

Yes

No

☐☐

If Yes to c. or d., provide a description of the exact location of any overflows or bypasses (on a separate sheet).

## 6. Sewer Design

a. Are the sewers deep enough to serve all adjacent basements? (refer to GLUMRB, *Recommended Standards for Wastewater Facilities*, 1990, Section 33.2) If no, please explain how the basements will be served:

Yes

No

☒☐

b. Are sewers at a minimum depth of 4 feet to prevent freezing? (GLUMRB Section 33.2) If no, please explain how freezing will be prevented:

Yes

No

☒☐

c. Where small sewers join larger ones, have the inverts of the larger sewers been lowered sufficiently to maintain the same energy gradient? (GLUMRB Section 33.6)

Yes

No

N/A

☐☐☒

d. Have provisions been made to protect sewers against displacement by erosion and impact at velocities over 15 fps? (GLUMRB Section 33.45)

Yes

No

N/A

☐☐☒

e. Are sewers with slopes greater than 20 percent secured with concrete anchors (or equal), spaced as required? (GLUMRB Section 33.46)

Yes

No

N/A

☐☐☒

f. Do the sewers cross under or run parallel to any streams?

Cross

Parallel

No

☒☐☐

i. If sewers cross under any streams, are the sewers at a sufficient depth to protect the sewer line? (GLUMRB Section 36.11)

Yes

No

N/A

☒☐☐

ii. Are any sewers running parallel to the stream sufficiently removed from the streambed? (GLUMRB Section 36.12)

Yes

No

N/A

☐☐☒

7. Force Mains ☐ N/A

- a. Will a cleansing velocity of at least 2 feet per second be maintained in the force main? (GLUMRB Section 48.1) If No, please explain:

Yes ☒ No ☐

- b. Are air relief valve placed at high points in the force main to prevent air locking? (GLUMRB Section 48.2) If No, please explain:

Yes ☒ No ☐

- c. Is the force main designed to withstand water hammer pressures and associated cyclic reversal of stresses that are expected with the cycling of wastewater pump stations? (GLUMRB Section 48.4) If No, please explain:

Yes ☒ No ☐

## 8. Stream Protection

- a. Are there any stream crossings?

Yes ☒ No ☐

If Yes,

1. How many crossings are made? (GLUMRB Section 36.14)

1

2. Are the crossing perpendicular to the stream? (GLUMRB Section 36.14)

Yes ☒ No ☐

3. Are crossings to be made at previously disturbed areas?

Yes ☒ No ☐

4. Is the streambed substrate composed primarily of solid rock, sand and gravel, or silt?

Rock ☐ Sand/gravel ☒ Silt ☐

5. In areas of steep slope or unstable soils, are the sewers located on more level, terraced areas?

Yes ☐ No ☐ N/A ☒

- b. Do any sewers run parallel to any streams?

Yes ☐ No ☒

If Yes,

1. Is there any woody vegetation along the streambanks?

Yes ☐ No ☐

2. Are the sewers and construction easements located outside of the vegetated areas?

Yes ☐ No ☐ N/A ☐

3. In areas of steep slope or unstable soils, are the sewers located on more level terraced areas?

Yes ☐ No ☐ N/A ☐

If the response to either a. or b. is Yes, please provide the specific measures in the detail plans and specifications that will be used to ensure that damage to the stream corridor is minimized to the greatest extent possible and that the stream corridor is restored to original condition.

## 9. Manhole Design

- a. Manhole type (precast, cast-in-place, etc): Precast meeting ODOT Standard MH No. 3
- b. Material specification (ASTM): C478
- c. Joint specification (ASTM): C443
- d. Are watertight frames and covers used wherever manhole tops may be flooded by street runoff or high water? (GLUMRB Section 34.6) If no, explain: Yes ☒ No ☐
- e. Are manholes provided at the upstream end of each line? (GLUMRB Section 34.1) If no, explain: Not Applicable Yes ☐ No ☒
- f. Are manholes provided at all changes in size, grade, and alignment? (GLUMRB Section 34.1) If no, explain: Not Applicable Yes ☒ No ☐
- g. Are manholes provided at all sewer intersections? (GLUMRB Section 34.1) If no, explain: Yes ☒ No ☐
- h. Are drop manholes provided where the entrance sewer invert is 24 inches or more above the manhole invert? (GLUMRB Section 34.2) If no, explain: Not Applicable Yes ☐ No ☒
- i. Are inlet/outlet pipes connected with gasketed flexible watertight connections? (GLUMRB Section 34.6) If no, explain: Yes ☒ No ☐

Attach any additional sheets necessary for explanations.

## 10. Service Laterals

- a. Will wyes and/or tees be provided for service lateral connection at the time the sewer line is installed? Yes ☒ No ☐  
If no, please explain how will service laterals be connected to the sewer:
- b. Will residences/businesses be connected to the new sewer using existing private laterals or new private service laterals? Existing ☐ New ☐ N/A ☒
- c. Please identify the owner's specifications for private service laterals:

Pipe Size	Pipe Material	Material Specification	Joint Specification	Bedding Classification	Minimum Slope
8"	PVC	ASTM D3034 SDR 35	ASTM D3212	ODOT 603.04 Class B	0.40%
6"	PVC	ASTM D3034 SDR 35	ASTM D3212	ODOT 603.04 Class B	0.60%

## 10. Service Laterals, cont.

- d. Will the installation of private sewer laterals be monitored by the owner for quality of materials and installation?

Yes ☒ No ☐ N/A ☐

## 11. Protection of Water Supplies

- a. Are there any physical connections between the sewer and a public or private potable water supply system (including all appurtenances)? (GLUMRB Section 38.1)
- b. Are any existing public waterworks units (e.g., public supply wells, water treatment facilities, storage facilities) within 200 feet of the proposed sewer or any private wells within 50 feet of the proposed sewer? (GLUMRB Section 38.2)

Yes ☐ No ☒

Yes ☐ No ☒

If Yes, specify the plan sheets on which the sources are shown: \_\_\_\_\_

If Yes, will sewers be encased or constructed of watertight pipe?

Encased Watertight

☐ ☐

- c. Are the sewers at least 10 feet horizontally separated from water lines? (GLUMRB Section 38.31)

Yes ☒ No ☐

If No, please specify the plans sheets on which these conditions are not met, and describe the measures taken to ensure protection of the water system:

- d. When crossing water mains, are the sewers at least 18 inches below water lines? (GLUMRB Section 38.32)

Yes ☒ No ☐

If No, please specify the plans sheets on which these conditions are not met, and describe the measures taken to ensure protection of the water system:

## 12. Installation and Testing (Applicant to Provide)

- a. Installation Inspector: \_\_\_\_\_

Name/Firm

Phone

Street Address

City

State

Zip

- b. What type of sewer leakage test will be use? (GLUMRB 33.9)

☒ Hydrostatic ☐ Air

Page numbers in specifications for testing requirements of gravity and pressure sewers: 2

- c. Is flexible pipe deflection testing specified? (GLUMRB 33.85)

☒ Yes ☐ No ☐ N/A

Page numbers in specifications for testing requirements of flexible pipe: 2

## 12. Installation and Testing, cont.

d. What type of manhole testing will be used? (GLUMRB Section 34.7) VacuumPage numbers in specifications for testing requirements of manholes: 2, 3

## 13. Sewer Use Ordinance

A statement that "Roof drains, foundation drains, and other clean water connections to the sanitary sewer system are prohibited" must be shown on the plans. Copies of the ordinances or regulations providing for the enforcement of this requirement must be on file with Ohio EPA.

a. An ordinance/regulation to this effect was adopted on: N/A (date).b. Enforcement of this ordinance/regulation is the responsibility of: Ownerc. It is the opinion of the engineer submitting these plans that adequate enforcement of this ordinance/regulation is being properly carried out. Yes ☐ No ☐ Unknown ☒14. Pump Stations - Description ☐ N/A (Skip to Item 23)a. How many pump stations are included in this project? 2

b. Type of pumps/pump station (check as many as apply):

☒ Concrete ☐ Metal ☐ Fiberglass ☒ Factory Built ☐ Built-in Place☒ Submersible ☐ Suction Lift ☐ Screw Pump

c. Type of wastewater to be pumped:

☒ Sanitary ☐ Combined (sanitary/storm) ☐ Commercial ☐ Industrial

Source of industrial waste (if applicable): \_\_\_\_\_

## 15. Flood Protection for Pump Stations

a. Flood elevation (GLUMRB Section 41.1): N/A 100 year, MSL N/A 25 year, MSLb. Is the site subject to flooding? ☐ Yes ☒ Noc. Is the pump station site accessible at all times? (GLUMRB Section 41.2) ☒ Yes ☐ Nod. Is the site graded to lead surface drainage away from the station? ☒ Yes ☐ Noe. Is the site protected to prevent vandalism and unauthorized entry? (GLUMRB Section 41.2) ☒ Yes ☐ Nof. Distance to nearest residence: N/A feetg. Distance to nearest building: 15 feet

## 16. Design Flow from Pump Station "A"

Identify flow expected at start up (i.e., currently existing flows) and the flows expected at design (i.e., currently existing flows plus flows from future development) tributary to the pump station.

	Average Daily Flow	Peak Hourly Flow
Start Up Flows (based on immediate area served)	N/A MGD	N/A MGD
Design Flows (based on planned area served)	0.0014 MGD	0.00052 MGD

Assumptions used to calculate above flows	Start-Up	Design
Residential Population at <u>35</u> gal/cap./day	40 people	40 people
Non-Residential Flows (i.e., commercial, industrial, etc.)	0.0014 MGD	0.0014 MGD

## 17. Pump Specifications

Include all pumps in the pump station (existing or proposed) when completing this table.

ALL PUMPS	Pump 1	Pump 2	Pump 3	Pump 4
Existing or proposed	Proposed	Proposed		
Pump type Myers WGX 2043 - 2 HP - 2 Inch	Submersible Grinder	Submersible Grinder		
Casing material	Cast Iron	Cast Iron		
Impeller type	Recessed Bronze	Recessed Bronze		
Motor type (variable or constant speed)	Constant	Constant		
Are high/premium efficiency motors specified?	No	No		
Operating conditions: Rate T.D.H.	29 gpm 38 ft.	29 gpm 38 ft.	gpm ft.	gpm ft.
Speed range	3,450 rpm	3,450 rpm	rpm	rpm

DRY PIT PUMPS ONLY	<input checked="" type="checkbox"/> N/A	Pump 1	Pump 2	Pump 3	Pump 4
Will the pump pass a 3" sphere? (GLUMRB Section 42.33)					
Diameter of suction openings (GLUMRB Section 42.33)					
Diameter of discharge opening (GLUMRB Section 42.33)					
Is the water seal unit air gapped? (OAC 3745-95)					
Does the pump have its own intake? (GLUMRB Section 42.36)					
Does the pump have its own discharge line check valve? (GLUMRB Section 42.52)					
Does the pump have its own suction line shutoff valve? (GLUMRB Section 42.51)					
Does the pump have its own discharge line shutoff valve? (GLUMRB Section 42.52)					
SUBMERSIBLE PUMPS ONLY	<input checked="" type="checkbox"/> N/A	Pump 1	Pump 2	Pump 3	Pump 4
Will the pump pass a 3" sphere? (GLUMRB Section 42.33)		No	No		
Diameter of discharge opening (GLUMRB Section 42.33)		1 1/4 in.	1 1/4 in.	in.	in.
Can the pump be removed without dewatering the wet well? (GLUMRB Section 44.2)		Yes	Yes		
Is the power cable provided with strain relief? (GLUMRB Section 44.33)		Yes	Yes		
Is a separate lifting chain/cable provided? (GLUMRB Section 44.2)		Yes	Yes		
SCREW PUMPS ONLY	<input checked="" type="checkbox"/> N/A	Pump 1	Pump 2	Pump 3	Pump 4
Does the pump have its own wet well and slide gate?					
Have provisions for starting the pump when the wet well is frozen been provided?					

18. Dry Well Construction ☒ N/A (Skip to Item 19)

- a. Is the dry well completely separated from the wet well? (GLUMRB Section 42.21) ☐ Yes ☐ No
- b. Is a sump pump provided for dewatering the dry well? (GLUMRB Section 42.37) ☐ Yes ☐ No
- c. Is the sump pump discharge line air gapped above the high water alarm elevation? ☐ Yes ☐ No
- d. Has the stairway/access ladder been provided with non-slip treads? ☐ Yes ☐ No



## 18. Dry Well Construction, cont.

e. Has a rigidly fixed landing been provided every 10 vertical feet for factory built pump stations or every 12 vertical feet for built-in-place pump stations? (GLUMRB Section 42.232)

☐ Yes ☐ No

f. What type of ventilation has been provided? (GLUMRB Section 42.71 and 42.76)

Continuous Intermittent

☐ ☐

g. Number of air changes per hour (GLUMRB Section 42.76):

\_\_\_\_\_ at \_\_\_\_\_ cfm

h. Where are the controls for the ventilation equipment located? (GLUMRB Section 42.73)

Inside Outside

☐ ☐

i. Is the dry well ventilation system separate from the wet well system?

☐ Yes ☐ No

j. Is automatic heating and dehumidification equipment provided for the protection of motors and control systems? (GLUMRB Section 42.74)

☐ Yes ☐ No

k. Are the lights, fan wheels, etc., designed for NEC Class I, Group D, Division 1 locations? (GLUMRB Section 42.35)

☐ Yes ☐ No

19. Wet Well Construction ☐ N/A (Skip to Item 20)

a. Is a separate or divided wet well provided? (GLUMRB Section 42.61)

Divided Separate

☐ ☒

b. Wet well effective volume (GLUMRB Section 42.62) Effective volume calculated between shutoff and first level on.

94 gallons

c. Are inlets to the wet well provided below the minimum water surface to prevent turbulence and subsequent odors?

☐ Yes ☒ No

d. Is there a bypass or overflow from the wet well?

☐ Yes ☒ No

If Yes,

i. What is the elevation of the overflow invert?

ii. Is treatment of the bypass/overflow provided?

Yes No N/A

☐ ☐ ☐

iii. Are there provision for retaining waste on site?

Yes No N/A

☐ ☐ ☐

e. What type of ventilation has been provided? (GLUMRB Sections 42.71 and 42.75)

Continuous Intermittent Portable

☒ ☐ ☐

f. Number of air changes per hour (GLUMRB Section 42.75)

\_\_\_\_\_ at \_\_\_\_\_ cfm

g. Where are the controls for the ventilation equipment located? (GLUMRB Section 42.73)

Inside Outside

☐ ☒

h. Is all equipment located in the wet well suitable for use under corrosive conditions?

☒ Yes ☐ No

## 20. Pump Controls and Flow Measurements

## a. Wet Well Elevations

Suction Line Invert	1132.60	Pump No. 1 Start	1134.25
Discharge Line Invert	1136.50	Pump No. 2 Start	1136.00
Bottom of Wet Well	1132.50	Pump No. 3 Start	N/A
Low Shut Off	1133.25	High Water Alarm	1135.75

## b. Flow Measurements (Indicate which type of flow measurement)

Indicating, totalizing, and recording device  
(design peak hourly flow > 1,200 gpm)

☐

Elapsed time meters (design peak  
hourly flow < 1,200 gpm)

☒

## 21. Protection of Water Supplies

Is potable water provided at the pump station?

☐ Yes ☒ No

If Yes, is a minimum air gap of 6 inches, break tank, and booster pump provided?  
(GLUMRB Section 42.9)

☐ Yes ☐ No

## 22. Emergency Operation

## a. Type of emergency pumping capability provided? (GLUMRB Section 46.2)

☒ Dual substation ☐ Portable generator ☐ Permanent generator ☐ Portable pump ☐ None

If None, please explain:

b. Regardless of type of emergency pumping capability provided, does the standby system have sufficient capacity to start up and maintain the total rated running capacity of the pump station? (GLUMRB Section 46.2)

☒ Yes ☐ No

c. Is the portable generator or portable pump used to provide stand-by operation at multiple locations? If Yes, how many: \_\_\_\_\_

Yes No N/A  
☐ ☐ ☒

d. Is an electrical hookup for a portable generator provided?

Yes No N/A  
☒ ☐ ☐

e. Is a hookup to the force main for portable pumps provided? (GLUMRB Section 46.2)

☒ Yes ☐ No

f. Does the owner/operator of the pump station have any portable pumps to use when needed? (GLUMRB Section 46.2)

☐ Yes ☒ No

g. What type of alarm is provided?  
(GLUMRB Section 45)

☐ Telemetered

☒ Audio Visual,  
battery operated

☐ Other: \_\_\_\_\_  
(Please specify)

## 23. Authorities

- a. Plans for the proposed installation of a county, village, or municipal sewer that is tributary to a sewage treatment plant with another political entity must be accompanied by written consent of both entities.

Is a written intermunicipal agreement is attached?

Yes	No	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If no, state what form of consent is provided: \_\_\_\_\_

- b. Have all permanent construction easements been obtained?

Yes	No	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- c. Have all temporary construction easements been obtained?

Yes	No	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## 24. Submittals

This application must include the following unless otherwise instructed by Ohio EPA:

- ☒ Four copies of the detail plans including profile and plan views of all sewers (shown on the same sheet), existing (as applicable) and proposed pump station facilities, incorporating all of the details outlined in Section 20.1, 20.2 and 20.3 of *Recommended Standards for Wastewater Facilities*.
- ☒ Two copies of complete technical specifications
- ☒ Two copies of the Permit to Install Application including Form A and pertinent B forms
- ☒ Fee check payable to "Treasurer, State of Ohio"

25. The foregoing data is true statement of facts pertaining to this proposed sanitary sewer and/or pump station installation.

Date: 5-10-01

Signed: Donald M. Bregal  
Engineer preparing plans

P.E.



**Ohio Environmental Protection Agency**  
**Permit to Install/Plan Approval Application**  
**Sanitary Sewer and Pump Station Construction**

AGENCY USE ONLY

Application Number \_\_\_\_\_

Date Submitted \_\_\_\_\_

Applicant: American Energy Corporation  
 Facility Owner: American Energy Corporation  
 Ultimate owner if different: \_\_\_\_\_  
 Application/Plans Prepared by: Jack A. Hamilton & Associates, Inc.  
 Project Name: Century Deep Mine - Pump Station B

**1. Project Description**

- a. Describe the location, size, and current development of the area to be served. List street address, township, county, and include longitude and latitude coordinates in describing location.

The site is the former Allison deep mine. The ODNr surface mine permit is approximately 46 acres in size. The site is located in Section 3, T-6N, R-5W, Wayne Township, Belmont County, Ohio.  
Latitude: 39° 53' 42.4" Longitude: 81° 01' 23.8"

- b. What is the possibility that future sanitary sewer extensions will connect to the sanitary sewers which are the subject of this application?

There will be no future connections to the system due to its location and the fact that the system will be used only to service the deep mine facility.

- c. Are there any pump stations included as part of this sewer construction?  
 (If No, skip items 14 through 22 for pump stations)

Yes ☒ No ☐

- d. Indicate type(s) of sewers proposed (check all that apply):

☐ Conventional gravity☐ Small diameter gravity☐ Pressure (GP or STEP)☐ Vacuum☐ Siphon☒ Force main**2. Pipe Specifications: Please identify each type (as indicated in 1d above) and size of pipe included in this project.**

Type	Pipe Size	Pipe Material	Material Specification	Joint Specification	Bedding Classification	Minimum Slope	Pipe Length	Maximum Manhole Spacing
Force Main	4"	PVC	ASTM D2241 SDR21 CL200	ASTM D3139 ASTM DF477	ODOT 603.04 Class C	N/A	510 LF	N/A

\* List ASTM, AWWA, or ANSI specification number.  
 \*\* 100 percent to pass 3/4 inch sieve. ASTM C-12 (A, B, C), D-2321 (IA, IB, II, III), or other.

## 3. Design Flow in Proposed Sewer

Identify flows expected at start up (i.e., currently existing flows) and the flows expected at design (i.e., currently existing flows plus flows from future development) at terminus of proposed sewer.

	Average Daily Flow	Peak Hourly Flow
Start Up Flows (based on immediate area served)	N/A MGD	N/A MGD
Design Flows (based on planned area served)	0.0093 MGD	0.0042 MGD
Hydraulic Capacity of Sewer		0.010 MGD

Assumptions used to calculate above flows	Start Up	Design
Residential Population at <u>35</u> gal/cap./day	265 people	265 people
Non-Residential Flows (i.e., commercial, industrial, etc.)	0.0093 MGD	0.0093 MGD

## 4. Receiving Wastewater Treatment Facility

- a. What treatment facility will be receiving flow from these sewers? Proposed 10,000 GPD plant on site

Present treatment facility average daily flow N/A MGD (based on \_\_\_\_\_ (month) 19 \_\_\_\_ ADF)

Proposed treatment facility average daily flow N/A MGD (based on present average daily flow plus all connections currently under construction or being designed)

Design average daily flow of the treatment facility 0.009275 MGD (based on 2001 design year)

- b. Does the treatment facility have adequate capacity to treat anticipated flow from existing sewers plus the proposed sewers based on the sewer's design capacity?

Yes ☒ No ☐

If No, please describe the steps being taken to ensure that the treatment facility has adequate capacity (on a separate sheet). Include specific work items and schedules as appropriate.

- c. Is there an intent to expand the treatment facility to treat additional flow?

Yes ☐ No ☒

## 5. Connections to Existing Sewers and Pump Stations

- a. Will the proposed sewer be connected to an existing sewer?

Yes ☐ No ☒

If Yes,

1. What is the current peak flow in the existing sewer at the point of connection? \_\_\_\_\_ GPM

2. What is the design peak capacity of the existing sewer at the point of connection? \_\_\_\_\_ GPM

3. What type of sewage does the existing sewer carry?

combined ☐ sanitary ☐

4. Does the existing sewer have the capacity to handle design flow from the new sewer without creating or worsening (existing CSOs only) any overflows, bypasses, or other operational problems downstream of the new sewer connection point?

Yes ☐ No ☐

## 5. Connections to Existing Sewers and Pump Stations, cont.

b. Will be proposed sewer be connected to an existing pump station?

Yes

No

☐☒

If Yes,

1. With the largest unit out of service, what is the current peak flow in the pump station at the point of connection?

\_\_\_\_\_ GPM

2. With the largest unit out of service, what is the design peak pumping capacity of the pump station at the point of connection?

\_\_\_\_\_ GPM

3. What type of sewage does the existing pump station transport?

combined

sanitary

☐☐

4. Does the existing pump station and sewer downstream of the pump station have the capacity to handle design flow from the new sewer without creating or worsening (existing CSOs only) any overflows, bypasses, or other operational problems downstream of the pump station discharge?

Yes

No

☐☐

c. Are there any overflow or bypasses upstream of the point of connection that may be impacted by the flows from the new sewer?

Yes

No

☐☐

d. Are there any sanitary overflows or bypasses or combined sewer overflows downstream of the point of connection?

Yes

No

☐☐

If Yes to c. or d., provide a description of the exact location of any overflows or bypasses (on a separate sheet).

## 6. Sewer Design

a. Are the sewers deep enough to serve all adjacent basements? (refer to GLUMRB, *Recommended Standards for Wastewater Facilities*, 1990, Section 33.2) If no, please explain how the basements will be served:

Yes

No

☒☐

b. Are sewers at a minimum depth of 4 feet to prevent freezing? (GLUMRB Section 33.2) If no, please explain how freezing will be prevented:

Yes

No

☒☐

c. Where small sewers join larger ones, have the inverts of the larger sewers been lowered sufficiently to maintain the same energy gradient? (GLUMRB Section 33.6)

Yes

No

N/A

☐☐☒

d. Have provisions been made to protect sewers against displacement by erosion and impact at velocities over 15 fps? (GLUMRB Section 33.45)

Yes

No

N/A

☐☐☒

e. Are sewers with slopes greater than 20 percent secured with concrete anchors (or equal), spaced as required? (GLUMRB Section 33.46)

Yes

No

N/A

☐☐☒

f. Do the sewers cross under or run parallel to any streams?

Cross

Parallel

No

☐☒☐

i. If sewers cross under any streams, are the sewers at a sufficient depth to protect the sewer line? (GLUMRB Section 36.11)

Yes

No

N/A

☐☐☒

ii. Are any sewers running parallel to the stream sufficiently removed from the streambed? (GLUMRB Section 36.12)

Yes

No

N/A

☒☐☐

7. Force Mains ☐ N/A

a. Will a cleansing velocity of at least 2 feet per second be maintained in the force main? (GLUMRB Section 48.1) If No, please explain:

Yes ☒ No ☐

b. Are air relief valve placed at high points in the force main to prevent air locking? (GLUMRB Section 48.2) If No, please explain:

Yes ☒ No ☐

c. Is the force main designed to withstand water hammer pressures and associated cyclic reversal of stresses that are expected with the cycling of wastewater pump stations? (GLUMRB Section 48.4) If No, please explain:

Yes ☒ No ☐

## 8. Stream Protection

a. Are there any stream crossings?

Yes ☐ No ☒

If Yes,

1. How many crossings are made? (GLUMRB Section 36.14)

2. Are the crossing perpendicular to the stream? (GLUMRB Section 36.14)

Yes ☐ No ☐

3. Are crossings to be made at previously disturbed areas?

Yes ☐ No ☐

4. Is the streambed substrate composed primarily of solid rock, sand and gravel, or silt?

Rock ☐ Sand/gravel ☐ Silt ☐

5. In areas of steep slope or unstable soils, are the sewers located on more level, terraced areas?

Yes ☐ No ☐ N/A ☐

b. Do any sewers run parallel to any streams?

Yes ☒ No ☐

If Yes,

1. Is there any woody vegetation along the streambanks?

Yes ☐ No ☒

2. Are the sewers and construction easements located outside of the vegetated areas?

Yes ☒ No ☐ N/A ☐

3. In areas of steep slope or unstable soils, are the sewers located on more level terraced areas?

Yes ☐ No ☐ N/A ☒

If the response to either a. or b. is Yes, please provide the specific measures in the detail plans and specifications that will be used to ensure that damage to the stream corridor is minimized to the greatest extent possible and that the stream corridor is restored to original condition.

## 9. Manhole Design N/A

- a. Manhole type (precast, cast-in-place, etc): \_\_\_\_\_
- b. Material specification (ASTM): \_\_\_\_\_
- c. Joint specification (ASTM): \_\_\_\_\_
- d. Are watertight frames and covers used wherever manhole tops may be flooded by street runoff or high water? (GLUMRB Section 34.6) If no, explain: Yes ☐ No ☐
- e. Are manholes provided at the upstream end of each line? (GLUMRB Section 34.1) If no, explain: Not Applicable Yes ☐ No ☐
- f. Are manholes provided at all changes in size, grade, and alignment? (GLUMRB Section 34.1) If no, explain: Not Applicable Yes ☐ No ☐
- g. Are manholes provided at all sewer intersections? (GLUMRB Section 34.1) If no, explain: Yes ☐ No ☐
- h. Are drop manholes provided where the entrance sewer invert is 24 inches or more above the manhole invert? (GLUMRB Section 34.2) If no, explain: Not Applicable Yes ☐ No ☐
- i. Are inlet/outlet pipes connected with gasketed flexible watertight connections? (GLUMRB Section 34.6) If no, explain: Yes ☐ No ☐

Attach any additional sheets necessary for explanations.

## 10. Service Laterals N/A

- a. Will wyes and/or tees be provided for service lateral connection at the time the sewer line is installed? Yes ☐ No ☐  
If no, please explain how will service laterals be connected to the sewer:
- b. Will residences/businesses be connected to the new sewer using existing private laterals or new private service laterals? Existing ☐ New ☐ N/A ☐
- c. Please identify the owner's specifications for private service laterals:

Pipe Size	Pipe Material	Material Specification	Joint Specification	Bedding Classification	Minimum Slope



## 10. Service Laterals, cont.

- d. Will the installation of private sewer laterals be monitored by the owner for quality of materials and installation?

Yes ☐ No ☐ N/A ☐

## 11. Protection of Water Supplies

- a. Are there any physical connections between the sewer and a public or private potable water supply system (including all appurtenances)? (GLUMRB Section 38.1)

Yes ☐ No ☒

- b. Are any existing public waterworks units (e.g., public supply wells, water treatment facilities, storage facilities) within 200 feet of the proposed sewer or any private wells within 50 feet of the proposed sewer? (GLUMRB Section 38.2)

Yes ☐ No ☒

If Yes, specify the plan sheets on which the sources are shown: \_\_\_\_\_

If Yes, will sewers be encased or constructed of watertight pipe?

Encased ☐ Watertight ☐

- c. Are the sewers at least 10 feet horizontally separated from water lines? (GLUMRB Section 38.31)

Yes ☒ No ☐

If No, please specify the plans sheets on which these conditions are not met, and describe the measures taken to ensure protection of the water system: \_\_\_\_\_

- d. When crossing water mains, are the sewers at least 18 inches below water lines? (GLUMRB Section 38.32)

Yes ☒ No ☐

If No, please specify the plans sheets on which these conditions are not met, and describe the measures taken to ensure protection of the water system: \_\_\_\_\_

## 12. Installation and Testing (Applicant to Provide)

- a. Installation Inspector: \_\_\_\_\_  
Name/Firm Phone

Street Address

City

State

Zip

- b. What type of sewer leakage test will be use? (GLUMRB 33.9)

☒ Hydrostatic ☐ Air

Page numbers in specifications for testing requirements of gravity and pressure sewers: 2

- c. Is flexible pipe deflection testing specified? (GLUMRB 33.85)

☒ Yes ☐ No ☐ N/A

Page numbers in specifications for testing requirements of flexible pipe: 2

## 12. Installation and Testing, cont.

d. What type of manhole testing will be used? (GLUMRB Section 34.7) VacuumPage numbers in specifications for testing requirements of manholes: 2, 3

## 13. Sewer Use Ordinance

A statement that "Roof drains, foundation drains, and other clean water connections to the sanitary sewer system are prohibited" must be shown on the plans. Copies of the ordinances or regulations providing for the enforcement of this requirement must be on file with Ohio EPA.

a. An ordinance/regulation to this effect was adopted on: N/A (date).b. Enforcement of this ordinance/regulation is the responsibility of: Ownerc. It is the opinion of the engineer submitting these plans that adequate enforcement of this ordinance/regulation is being properly carried out. Yes ☐ No ☐ Unknown ☒14. Pump Stations - Description ☐ N/A (Skip to Item 23)a. How many pump stations are included in this project? 2

b. Type of pumps/pump station (check as many as apply):

☒ Concrete ☐ Metal ☐ Fiberglass ☒ Factory Built ☐ Built-in Place☒ Submersible ☐ Suction Lift ☐ Screw Pump

c. Type of wastewater to be pumped:

☒ Sanitary ☐ Combined (sanitary/storm) ☐ Commercial ☐ Industrial

Source of industrial waste (if applicable): \_\_\_\_\_

## 15. Flood Protection for Pump Stations

a. Flood elevation (GLUMRB Section 41.1): 943.3 100 year, MSL --- 25 year, MSL

b. Is the site subject to flooding? Note: Site will be filled to 944.0 elevation

☒ Yes ☐ No

c. Is the pump station site accessible at all times? (GLUMRB Section 41.2)

☒ Yes ☐ No

d. Is the site graded to lead surface drainage away from the station?

☒ Yes ☐ No

e. Is the site protected to prevent vandalism and unauthorized entry? (GLUMRB Section 41.2)

☒ Yes ☐ Nof. Distance to nearest residence: N/A feetg. Distance to nearest building: 120 feet

## 16. Design Flow from Pump Station "B"

Identify flow expected at start up (i.e., currently existing flows) and the flows expected at design (i.e., currently existing flows plus flows from future development) tributary to the pump station.

	Average Daily Flow	Peak Hourly Flow
Start Up Flows (based on immediate area served)	N/A MGD	N/A MGD
Design Flows (based on planned area served)	0.0093 MGD	0.0042 MGD

Assumptions used to calculate above flows	Startup	Design
Residential Population at 35 gal/cap./day	265 people	265 people
Non-Residential Flows (i.e., commercial, industrial, etc.)	0.0093 MGD	0.0093 MGD

## 17. Pump Specifications

Include all pumps in the pump station (existing or proposed) when completing this table.

ALL PUMPS	Pump 1	Pump 2	Pump 3	Pump 4
Existing or proposed	Proposed	Proposed		
Pump type Myers WGX 2043 - 2 HP - 2 Inch	Submersible	Submersible		
Casing material	Cast Iron	Cast Iron		
Impeller type	Cast Iron	Cast Iron		
Motor type (variable or constant speed)	Constant	Constant		
Are high/premium efficiency motors specified?	No	No		
Operating conditions: Rate T.D.H.	185 gpm 30 ft.	185 gpm 30 ft.	gpm ft.	gpm ft.
Speed range	1,750 rpm	1,750 rpm	rpm	rpm

DRY PIT PUMPS ONLY	<input checked="" type="checkbox"/> N/A	Pump 1	Pump 2	Pump 3	Pump 4
Will the pump pass a 3" sphere? (GLUMRB Section 42.33)					
Diameter of suction openings (GLUMRB Section 42.33)					
Diameter of discharge opening (GLUMRB Section 42.33)					
Is the water seal unit air gapped? (OAC 3745-95)					
Does the pump have its own intake? (GLUMRB Section 42.36)					
Does the pump have its own discharge line check valve? (GLUMRB Section 42.52)					
Does the pump have its own suction line shutoff valve? (GLUMRB Section 42.51)					
Does the pump have its own discharge line shutoff valve? (GLUMRB Section 42.52)					
SUBMERSIBLE PUMPS ONLY	<input checked="" type="checkbox"/> N/A	Pump 1	Pump 2	Pump 3	Pump 4
Will the pump pass a 3" sphere? (GLUMRB Section 42.33)		Yes	Yes		
Diameter of discharge opening (GLUMRB Section 42.33)		4 in.	4 in.	in.	in.
Can the pump be removed without dewatering the wet well? (GLUMRB Section 44.2)		Yes	Yes		
Is the power cable provided with strain relief? (GLUMRB Section 44.33)		Yes	Yes		
Is a separate lifting chain/cable provided? (GLUMRB Section 44.2)		Yes	Yes		
SCREW PUMPS ONLY	<input checked="" type="checkbox"/> N/A	Pump 1	Pump 2	Pump 3	Pump 4
Does the pump have its own wet well and slide gate?					
Have provisions for starting the pump when the wet well is frozen been provided?					

18. Dry Well Construction ☒ N/A (Skip to Item 19)

- a. Is the dry well completely separated from the wet well? (GLUMRB Section 42.21) ☐ Yes ☐ No
- b. Is a sump pump provided for dewatering the dry well? (GLUMRB Section 42.37) ☐ Yes ☐ No
- c. Is the sump pump discharge line air gapped above the high water alarm elevation? ☐ Yes ☐ No
- d. Has the stairway/access ladder been provided with non-slip treads? ☐ Yes ☐ No

## 18. Dry Well Construction, cont.

- e. Has a rigidly fixed landing been provided every 10 vertical feet for factory built pump stations or every 12 vertical feet for built-in-place pump stations? (GLUMRB Section 42.232)
- f. What type of ventilation has been provided? (GLUMRB Section 42.71 and 42.76)
- g. Number of air changes per hour (GLUMRB Section 42.76):
- h. Where are the controls for the ventilation equipment located? (GLUMRB Section 42.73)
- i. Is the dry well ventilation system separate from the wet well system?
- j. Is automatic heating and dehumidification equipment provided for the protection of motors and control systems? (GLUMRB Section 42.74)
- k. Are the lights, fan wheels, etc., designed for NEC Class I, Group D, Division 1 locations? (GLUMRB Section 42.35)

☐ Yes ☐ No

Continuous Intermittent

☐ ☐

\_\_\_\_\_ at \_\_\_\_\_ cfm

Inside Outside

☐ ☐☐ Yes ☐ No☐ Yes ☐ No☐ Yes ☐ No19. Wet Well Construction ☐ N/A (Skip to Item 20)

- a. Is a separate or divided wet well provided? (GLUMRB Section 42.61)
- b. Wet well effective volume (GLUMRB Section 42.62) Effective volume calculated between shutoff and first level on.
- c. Are inlets to the wet well provided below the minimum water surface to prevent turbulence and subsequent odors?
- d. Is there a bypass or overflow from the wet well?
- If Yes,
- i. What is the elevation of the overflow invert?
- ii. Is treatment of the bypass/overflow provided?
- iii. Are there provision for retaining waste on site?
- e. What type of ventilation has been provided? (GLUMRB Sections 42.71 and 42.75)
- f. Number of air changes per hour (GLUMRB Section 42.75)
- g. Where are the controls for the ventilation equipment located? (GLUMRB Section 42.73)
- h. Is all equipment located in the wet well suitable for use under corrosive conditions?

Divided Separate

☐ ☒

\_\_\_\_\_ 476 \_\_\_\_\_ gallons

☐ Yes ☒ No☐ Yes ☒ No

Yes No N/A

☐ ☐ ☐

Yes No N/A

☐ ☐ ☐

Continuous Intermittent Portable

☒ ☐ ☐

\_\_\_\_\_ at \_\_\_\_\_ cfm

Inside Outside

☐ ☒☒ Yes ☐ No

## 20. Pump Controls and Flow Measurements

## a. Wet Well Elevations

Suction Line Invert

929.60

Pump No. 1 Start

933.00

Discharge Line Invert

940.00

Pump No. 2 Start

936.25

Bottom of Wet Well

929.50

Pump No. 3 Start

—

Low Shut Off

930.75

High Water Alarm

935.75

## b. Flow Measurements (indicate which type of flow measurement)

Indicating, totalizing, and recording device  
(design peak hourly flow > 1,200 gpm)

☐

Elapsed time meters (design peak  
hourly flow < 1,200 gpm)

☒

## 21. Protection of Water Supplies

Is potable water provided at the pump station?

☐ Yes ☒ No

If Yes, is a minimum air gap of 6 inches, break tank, and booster pump provided?  
(GLUMRB Section 42.9)

☐ Yes ☐ No

## 22. Emergency Operation

## a. Type of emergency pumping capability provided? (GLUMRB Section 46.2)

☒ Dual substation ☐ Portable generator ☐ Permanent generator ☐ Portable pump ☐ None

If None, please explain:

b. Regardless of type of emergency pumping capability provided, does the standby system have sufficient capacity to start up and maintain the total rated running capacity of the pump station? (GLUMRB Section 46.2)

☒ Yes ☐ No

c. Is the portable generator or portable pump used to provide stand-by operation at multiple locations? If Yes, how many: \_\_\_\_\_

Yes No N/A  
☐ ☐ ☒

d. Is an electrical hookup for a portable generator provided?

Yes No N/A  
☒ ☐ ☐

e. Is a hookup to the force main for portable pumps provided? (GLUMRB Section 46.2)

☒ Yes ☐ No

f. Does the owner/operator of the pump station have any portable pumps to use when needed? (GLUMRB Section 46.2)

☐ Yes ☒ No

g. What type of alarm is provided?  
(GLUMRB Section 45)

☐ Telemetered

☒ Audio Visual,  
battery operated

☐ Other: \_\_\_\_\_  
(Please specify)

## 23. Authorities

- a. Plans for the proposed installation of a county, village, or municipal sewer that is tributary to a sewage treatment plant with another political entity must be accompanied by written consent of both entities.

Is a written intermunicipal agreement attached?

Yes

☐

No

☐

N/A

☒

If no, state what form of consent is provided: \_\_\_\_\_

- b. Have all permanent construction easements been obtained?

Yes

☐

No

☐

N/A

☒

- c. Have all temporary construction easements been obtained?

Yes

☐

No

☐

N/A

☒

## 24. Submittals

This application must include the following unless otherwise instructed by Ohio EPA:

- ☒ Four copies of the detail plans including profile and plan views of all sewers (shown on the same sheet), existing (as applicable) and proposed pump station facilities, incorporating all of the details outlined in Section 20.1, 20.2 and 20.3 of *Recommended Standards for Wastewater Facilities*.
- ☒ Two copies of complete technical specifications
- ☒ Two copies of the Permit to Install Application including Form A and pertinent B forms
- ☒ Fee check payable to "Treasurer, State of Ohio"

25. The foregoing data is true statement of facts pertaining to this proposed sanitary sewer and/or pump station installation.

Date: 5-10-01

Signed: \_\_\_\_\_

*Donald M. Bassel*

Engineer preparing plans

\_\_\_\_\_, P.E.

**OhioEPA**

Ohio Environmental Protection Agency

**Permit to Install/Plan Approval Application**  
**Wastewater Treatment Plants Less Than 100,000 GPD**

AGENCY USE ONLY

Application Number \_\_\_\_\_

Date Submitted \_\_\_\_\_

Applicant: American Energy Corporation  
 Facility Owner: American Energy Corporation  
 Ultimate owner if different: \_\_\_\_\_  
 Application/Plans Prepared by: Jack A. Hamilton & Associates, Inc.  
 Project Name: Century Deep Mine

**1. Design Basis**

Type of Establishment	Type of Units (employees, seats, residents, etc.)	Number of Units	Sewage Flow (gal/day)	Total (gpd)
Deep Mine/Prep Plant	Employees	265	X 35	= 9,275
Bathhouses			X	=
			X	=
			X	=
			X	=
			X	=
Total Hydraulic Flow =				9,275

**2. Influent Loads**

- a. Average daily design hydraulic flow (ADDF)  
 b. Design Influent BOD<sub>5</sub> concentration  
 c. Design BOD<sub>5</sub> loading 9,275 gpd @ 0.17 lb/100 gal =  
 d. Significant Runoff Period (SRP)  
 e. Peak Factor  
 f. Peak daily design flow (PDDF)  
 g. Peak Influent Flow Rate

9,275	gallons/day
0.2	mg/l (Max.)
15.8	pounds BOD <sub>5</sub> /day
24	hours
* See Attached Addendum	
9,275*	gallons/day
420*	gallons/minute

**3. Effluent Concentrations and Loads (30-day avg.)**

- a. CBOD  
 b. Suspended Solids  
 c. Ammonia - Nitrogen  
 d. Fecal Coliform  
 e. Dissolved Oxygen  
 f. Residual Chlorine  
 g. Others pH

Summer	Winter
10 mg/l	10 mg/l
12 mg/l	12 mg/l
1.0 mg/l	3.0 mg/l
1000#/100 ml	-----
6.0 mg/1min.	6.0 mg/1 minl
0.019 mg/l	-----
6.5 - 9.0	6.5 - 9.0



## 4. Flood Protection

a. 100 year flood elevation

943.3 MSL

b. 25 year flood elevation

— MSL

c. Describe measures to protect equipment: The treatment plant site will be elevated above the 100 year flood elevation to the 944.0 elevation. The top elevation of all structures will be at 944.50.

5. Design period: 30 years6. Receiving Stream: Piney Creek7. Effluent Discharge Location : Treated effluent will discharge into Pond 11 located on site8. Effluent Discharge Location Latitude/Longitude: Lat: 39° 53' 42.4" Long: 81° 01' 23.8"

## 9. Flow Equalization

a. Flow equalization basin volume:

4,830 gallons

b. Equalized flow:

9,275 gallons/day (should equal ADDF)

c. Air to be supplied:

25 cfm (with largest blower out of service)

## 10. Influent Pumping Station (Based on only one station)

a. Number of pumps: Pump Sta. "A"

1 pumps

b. Type of pumps:

Submersible Grinder

c. Influent pumping rate (IPR):

35 gpm (with largest pump out of service)

(Note: Influent pumping facilities should be able to pump the peak influent flow rate with the largest pump out of service unless a flow equalization basin is installed)

## 11. Pretreatment Device

a. Trash trap and capacity:

☒ Yes 1,617 gallons ☐ No

b. Comminutor with bar screen by pass and capacity:

☐ Yes ☐ gallons/minute ☒ No

c. Bar Screen: N/A

☐ Number ☐ Bar space opening

d. Other (state type): N/A

## 12. Aeration Tank Design

a. Number of aeration tanks:

2

b. Tank arrangement:

☒ Series ☐ Parallel

c. Total tank volume supplied:

10,109 gallons

d. Tank detention time:

24 hours

e. Amount of air supplied:

75 cfm (with largest blower out of service)

f. Describe the method of flow division where parallel aeration unit arrangements are planned:

**13. Final Settling Tank Design**

- a. Number of settling tanks: 1 tanks
- b. Detention time: 7 hours
- c. Average surface settling rate: 186 gpd/square foot
- d. Peak surface settling rate: 186 gpd/square foot
- e. Average weir overflow rate: 722 gpd/lineal foot
- f. Peak weir overflow rate: 722 gpd/lineal foot

**14. Describe method of scum removal and disposal:**

An air induced surface skimmer will be used in the clarifier to return surface scum to the aeration chamber.

**15. Describe method and frequency of sludge removal and method and location of sludge disposal:**

Sludge will be returned to the 2,151 gallon sludge holding tank by the clarifier sludge air lift return lines. Aeration will be provided at a rate of 4 cfm per 1,000 gallons of storage. Accumulated sludge will be removed annually and disposed of at the nearest licensed sanitary solid waste landfill or public waste water treatment plant in the event that sludge is too liquid for landfill disposal. Disposal will be performed by an independent contractor. (Contract to be provided)

**16. Upward Flow Fixed Media clarifiers Design**

- a. Upward peak flow rate: N/A gpm/square foot
- b. Weir overflow rate: N/A gpd/lineal foot

**17. Sludge Management**

- a. BOD<sub>5</sub> population equivalent flow (BPEF): BOD<sub>5</sub> loading \_\_\_\_\_ lbs/day/0.167 pounds BOD<sub>5</sub>/PE x 100  
gallons/PE = \_\_\_\_\_ gallons
- b. Sludge holding tank volume (SV): 2,151 gallons
- c. Amount of air supplied: 9 cfm (with largest blower out of service)
- d. Number of sludge drying beds: N/A beds
- e. Total bed area: N/A square feet

**18. Check which of the following modes of advance treatment for effluent disposal are to be installed:**

- |   |  |
|---|--|
| <input type="checkbox"/> Surface slow sand filter | <input type="checkbox"/> Rapid gravity sand filter |
| <input type="checkbox"/> Subsurface sand filter   | <input type="checkbox"/> Leaching tile field       |
| <input type="checkbox"/> Mound system             | <input type="checkbox"/> Lagoons                   |
| <input type="checkbox"/> Other: _____             | <input type="checkbox"/> Constructed Wetland       |

**19. Tertiary Dosing Device**

- a. Dosing volume provided: 780 gallons (effective capacity)
- b. Size of provided dosing pumps: 78 gallons/minute 15 TDM

**20. Surface Slow Sand Filters**

- a. Number of surface slow sand filters: 2
- b. Total sand filter area provided: 833 square feet
- c. Loading rate: 9,275/833 11 gpd/ft<sup>2</sup>
- d. Well height above sand beds: 1.50 feet
- e. Source of filter sand: Ohio EPA approved source/supplier
- f. Effective grain size: 0.40 mm - 0.80 mm
- g. Uniformly coefficient: 3.0 max

**21. Rapid Gravity Sand Filter** N/A

- a. Number of cells or units provided: \_\_\_\_\_
- b. Total filter area provided: \_\_\_\_\_ square feet
- c. Clear well capacity: \_\_\_\_\_ gallons
- d. Rate of backwash: \_\_\_\_\_ gdm/square foot
- e. Duration of backwash: \_\_\_\_\_ minutes
- f. Number of backwash pumps: \_\_\_\_\_ at \_\_\_\_\_ gallons/minute

**22. Subsurface Sand Filter** N/A

Total sand filter area provided: \_\_\_\_\_ square feet

**23. Leaching Tile Field** N/A

Total lineal length of field: \_\_\_\_\_ feet

**24. Mound Systems** N/A

- a. Why is a mound system proposed? Please explain briefly.

b. Daily wastewater load: \_\_\_\_\_ gpd \_\_\_\_\_ gpm

c. How would you describe the site soil profile (check one)

\_\_\_\_\_ impermeable soil layer (soil or bedrock) 3-4 gpd/lineal foot

\_\_\_\_\_ semi-permeable soil layer 5-6 gpd/lineal foot

\_\_\_\_\_ creviced bedrock 8-10 gpd/lineal foot

\_\_\_\_\_ water table 3-4 gpd/lineal foot

d. Linear loading rate: \_\_\_\_\_ gpd/lineal foot

e. Basal loading rate: \_\_\_\_\_ gpd/square foot

f. Sand fill loading rate: \_\_\_\_\_ gpd/square foot

g. Mound fill depth: \_\_\_\_\_ inches

## 24. Mound System, cont. N/A

- h. Delivery pipe: material specification \_\_\_\_\_ diameter: \_\_\_\_\_ inches
- i. Manifold pipe: material specification \_\_\_\_\_ diameter: \_\_\_\_\_ inches
- j. Lateral pipe: material specification \_\_\_\_\_ diameter: \_\_\_\_\_ inches
- number of laterals: \_\_\_\_\_
- total length: \_\_\_\_\_ feet
- number of observation tubes: \_\_\_\_\_

## 25. Lagoons N/A

- a. Lagoon volume provided: \_\_\_\_\_ gallons
- b. Number of cells: \_\_\_\_\_
- c. Average design flow depth: \_\_\_\_\_ feet
- d. Lagoon embankment slope: \_\_\_\_\_ vertical to \_\_\_\_\_ horizontal

## 26. Disinfection System

Check the type of disinfection system to be employed:

- ☒ Tablet chlorination -  $\text{Ca}(\text{OCl})_2$
- ☐ Liquid chlorination - solutions of either  $\text{Ca}(\text{OCl})_2$  or  $\text{NaOCl}$
- ☐ Gas chlorination
- ☐ Ultraviolet
- ☐ Other: \_\_\_\_\_

## a. Chlorination:

- i. Provided chlorine contact tank volume : \_\_\_\_\_ 1,170 \_\_\_\_\_ gallons
- ii. Chlorine dosage rate: \_\_\_\_\_ 8 \_\_\_\_\_ mg/l (at peak flow)
- iii. Contact time at peak flow rate: \_\_\_\_\_ 15 \_\_\_\_\_ minutes @ pk discharge rate

## b. Ultraviolet (UV) Disinfection N/A

- i. Source of UV light: \_\_\_\_\_
- ii. Check the type of UV reactor to be employed:
- \_\_\_\_\_ Quartz-tube reactor (UV source immersed in wastewater)
- \_\_\_\_\_ Teflon-tube reactor (UV source not in direct contact with wastewater)
- iii. Number of UV modules: \_\_\_\_\_
- iv. Lamps per module: \_\_\_\_\_
- v. UV transmissivity quality: \_\_\_\_\_ percent
- vi. UV light at a wavelength of 253.7 nm: \_\_\_\_\_ percent
- vii. Minimum design dosage: \_\_\_\_\_ microwatts/square centimeter/second
- viii. Contact time at peak flow rate: \_\_\_\_\_ seconds

c. Please describe the procedures that will be employed to clean and maintain the system:

27. Dechlorination ☐ N/A

Check the type of dechlorination system to be employed:

☐ Sodium bisulfite (sodium)☐ Sodium meta bisulfite (solution)☐ Sulfur dioxide (gas)☒ Other: Tablet

- a. Initial effluent chlorine residual: 0.5 mg/l
- b. Final effluent chlorine residual: 0.18 mg/l
- c. Amount of dechlorination agent utilized: \_\_\_\_\_ pounds (gas)
- d. Amount of dechlorination agent utilized: \_\_\_\_\_ gpd (solution)
- e. Concentration of dechlorination solution: \_\_\_\_\_ percent
- f. Density of dechlorination solution: \_\_\_\_\_ pounds/gallon
- g. Contact time based on PDDF: \_\_\_\_\_ seconds

## 28. What type of flow measurement device will be installed (e.g. flow indicating, recording, totalizing, etc.)? Describe the location (s).

None

## 29. What type of effluent sampling equipment will be used?

None

What other types of monitoring equipment will be used?

## 30. Will a certified operator be employed to run the proposed treatment works?

☐ Yes \_\_\_\_\_ full time or \_\_\_\_\_ part time

☒ No

## 31. Submittals

*This application must include the following unless otherwise directed by the Ohio EPA.*

- ☐ Four copies of the detail plans including site plans, vicinity map, schematic diagrams, plan view, elevation views and cross-sectional views necessary to evaluate the processes.
- ☐ Two copies of complete technical specifications
- ☐ Two copies of the Permit to Install/Plan Approval Application including Form A and appropriate B form(s)
- ☐ Fee check payable to "Treasurer, State of Ohio"

## 32. The foregoing data is a true statement of facts pertaining to this proposed wastewater treatment facility(ies).

Date: 5-10-01 Signed: Donall M. Bruffal

Engineer Preparing Plans

Addendum to Supplemental Form B3, Section 2, Items (e)(f)(g)

The proposed sanitary treatment plant will only service the deep mine and coal preparation plant facilities. American Energy Corporation has provided the following information: The maximum number of employees that will be on site per day will be 265 people. The work day will be divided into shifts - day, afternoon and midnight. The total number of employees per shift is broken down as follows:

Day Shift	=	120 people
Afternoon	=	92 people
Midnight	=	53 people

The maximum amount of sanitary runoff produced per day would be:

$$265 \text{ employees} \times 35 \text{ gallons per day} = 9,275 \text{ GPD}$$

The 35 gallon per day figure was taken from the Ohio EPA "Greenbook" and is based on workers in a factory with showers available.

The peak flow for the site will occur once a day at the end of the day shift when the employees take their showers:

$$120 \text{ employees} \times 35 \text{ gallons} = 4,200 \text{ gallons}$$

$$4,200 \text{ gallons} / 10 \text{ minutes of shower time (estimated)} = 420 \text{ gallons per minute}$$

The treatment plant is designed with flow equalization measures. A 4,830 gallon tank will be used to control the peak flow conditions.

# Century Mine

## Sanitary Sewer System Specifications

Sanitary Sewer Testing Specifications

Influent Pump Station A Product Information & Specifications

Effluent Pump Station B Product Information & Specifications

Flow Equalization Pump Product Information & Specifications

Dosing Pump Product Information & Specifications

May 2001

PREPARED BY:



Jack A.

**HAMILTON & ASSOCIATES, INC.**

Consulting Engineers & Surveyors

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AEC 01585

## Sanitary Sewer Testing Specifications



## 1. Sanitary Sewer Pipe Testing

### A. Hydrostatic Testing

1. The maximum allowable leakage is 100 gallons per inch of nominal pipe size per mile of pipe during a 24-hour period. The test shall be performed with a minimum positive head of 2 feet.
2. Procedure:
  - A. Close all openings in the sanitary system
  - B. Fill the system with water
  - C. Purge all air out of the system and refill with water
  - D. Disconnect the water supply
  - E. Test and inspect all joints for leaks
  - F. If necessary, repair and replace any sections of the system that exceed the maximum allowable leakage listed above and retest the system.

### B. Deflection Testing

1. For PVC pipe, the entire length of the installed main line pipe shall be tested with an approved go/no-go mandrel under the supervision of the Belmont County Sanitary Sewer District. The testing shall be conducted after the final backfill has been in place for at least 30 days. No pipe shall exceed a deflection greater than 5%. The deflection test shall be run using a mandrel having a diameter as shown in the following table. The test shall be performed without a mechanical pulling device. All pipe exceeding the allowable deflection shall be replaced or repaired and retested at no additional cost to the owner.

<u>Pipe Diameter</u>	<u>Mandrel Size</u>
4"	3.8"
6"	5.7"
8"	7.6"
10"	9.5"

## 2. Manhole Testing

### A. Vacuum Testing

1. All manholes shall be vacuum tested.
2. All lift holes shall be plugged with non-shrinking mortar.

3. The seal between manhole sections shall comply with ASTM C443.
4. Stubouts, manhole boots and pipe plugs shall be secured to prevent movement during testing.
5. Installation and operation of the vacuum equipment and indicating devices shall be in accordance with equipment specifications as provided by the manufacturer and approved by the Belmont County Sanitary Sewer District.
6. With the vacuum in place:
  - a. Inflate the compression band to 40 psi to effect a seal between the vacuum base and the structure.
  - b. Connect the vacuum pump to the outlet port with the valve open.
  - c. Draw a vacuum to 10" of Hg and close the valve.
7. Acceptable standards for leakage shall be established from the elapsed time for a negative pressure change from 10 inches to 9 inches of mercury. The maximum allowable leakage rate for a four-foot diameter manhole shall be in accordance with the following table:

<u>Manhole Depth</u>	<u>Minimum Elapsed Time for a Pressure Change of 1 Inch Hg</u>
10 feet or less	60 Seconds
>10 feet and <15 feet	75 Seconds
>15 feet and <25 feet	90 Seconds

8. If the manhole fails the test, necessary repairs shall be made and the vacuum test repeated until the manhole passes the test or the manhole shall be tested in accordance with standard exfiltration methods and rated accordingly.
9. If a manhole joint mastic is completely pulled out during the vacuum test, the manhole shall be disassembled and the mastic replaced.

## Influent Pump Station A Product Information & Specifications

# ~~WG20~~ and **WGX20** (EXPLOSION-PROOF)

Standard and Explosion-proof  
2 HP Submersible Grinder Pumps



(WGX20 only)



**T**HE MYERS WG20 IS A RUGGED 2 HORSEPOWER SUBMERSIBLE CENTRIFUGAL GRINDER PUMP DESIGNED FOR RESIDENTIAL, LIGHT COMMERCIAL OR INDUSTRIAL APPLICATIONS. It is especially suited for use in pressure sewer applications or in systems with long discharge runs or high static heads. The WG20 features a patented cutter mechanism and recessed impeller design to efficiently grind typical domestic sewage solids into a fine slurry.

The WG20 grinder pump is available in standard and U.L. Listed explosion-proof (WGX20), construction for use in Class I, Group D hazardous locations.

The WG20 can be installed in a variety of packaged systems. Factory-assembled simplex or duplex packages with guide rail systems or suspended systems are available. Individual rail components are also available for installation in on-site concrete systems. F. E. Myers offers a complete line of submersible sump, sewage, effluent, grinder, non-clog wastewater pumps, controls, basins and accessories. For additional information, please contact your local Myers representative or the Myers Ashland, Ohio sales office at 419/289-1144.

## ADVANTAGES BY DESIGN

IDEAL FOR USE IN PRESSURE SEWER SYSTEMS.

- Recessed impeller provides steep non-overloading operating curve.

## DURABLE MOTOR WILL DELIVER MANY YEARS OF RELIABLE SERVICE.

- Oil-filled motor for maximum heat dissipation and constant bearing lubrication.
- Recessed impeller reduces radial bearing loads; increases bearing life.
- High-torque capacitor start single phase or three phase motors for assured starting under heavy load.
- Seal leak probes and on-winding heat sensors warn of seal leak condition, and stop motor if motor over heats. Helps prevent costly motor damage.

## THE WG20 IS DESIGNED FOR EASY MAINTENANCE.

- Shredding ring and grinder impeller are replaceable without dismantling pump or motor.

## PRODUCT CAPABILITIES

Capacities To	40 GPM	150 LPM
Heads To	105 ft.	32.1 m
Liquids Handling	domestic raw sewage	
Intermittent Liquid Temp.	up to 140°F	up to 60°C
Winding Insulation Temp. (Class B)	266°F	130°C
Motor Electrical Data (Single phase motors are capacitor start type. Myers control panels or capacitor kits are required for proper operation and warranty.)	2 HP, 3450 RPM, 1 Ph-capacitor start/run, 208 or 230 volts, 60 Hz 3 Ph-induction run, 200, 230, 460, 575 volts, 60 Hz	
Std. Third Party Approvals	CSA	
Optional Approvals	UL Class I, Group D (WGX20 only) file E68118	
Acceptable pH Range	6-9	
Specific Gravity	.9-1.1	
Viscosity	28-35 SSU	
Discharge, NPT	1-1/4 in.	31.75 mm
Min. Sump Dia. (Simplex)	24 in.	61 cm
(Duplex)	36 in.	91.4 cm

NOTE: Consult factory for applications outside of these recommendations.

Construction Materials	
Motor Housing, Seal Housing	cast iron, Class 30
Cord Cap and Volute Case	ASTM A48-76
Impeller	recessed, bronze
Power Cord	15 ft. 14/4 SOW/SOW-A
Control Cord	15 ft. 18/5 SOW/SOW-A
Mechanical Seals	double tandem, carbon and ceramic
Standard	lower tungsten carbide
Optional	
Pump, Motor Shaft	416 SST
Fasteners	300 Series SST
Shredding Ring and Grinder Impeller	440 SST, 58-60 Rockwell

WHERE INNOVATION MEETS TRADITION

**Myers®**

Pentair Pump Group

ISO 9001 Certified

AEC 01590

# WG20 and WGX20 (EXPLOSION-PROOF)

Standard and Explosion-proof  
2 HP Submersible Grinder Pumps

## STATOR

2 HP, 3450 RPM, 1 and 3 phase. Press fit for perfect alignment and best heat transfer. Oil-filled motor conducts heat and lubricates bearings.

## CABLE ENTRY SYSTEM

Provides double seal protection. Cable jacket sealed by compression grommet. Individual wires sealed by epoxy potting.

## HEAT SENSOR

Protects motor from burnout due to excessive heat from any overload condition. Automatically resets when motor has cooled.

## BALL BEARINGS

Upper and lower ball bearings support shaft and rotor and take axial and radial loads.

## HEAVY 416 SST SHAFT

Corrosion resistant. Reduces shaft deflection due to grinding loads.

## SHAFT SEALS

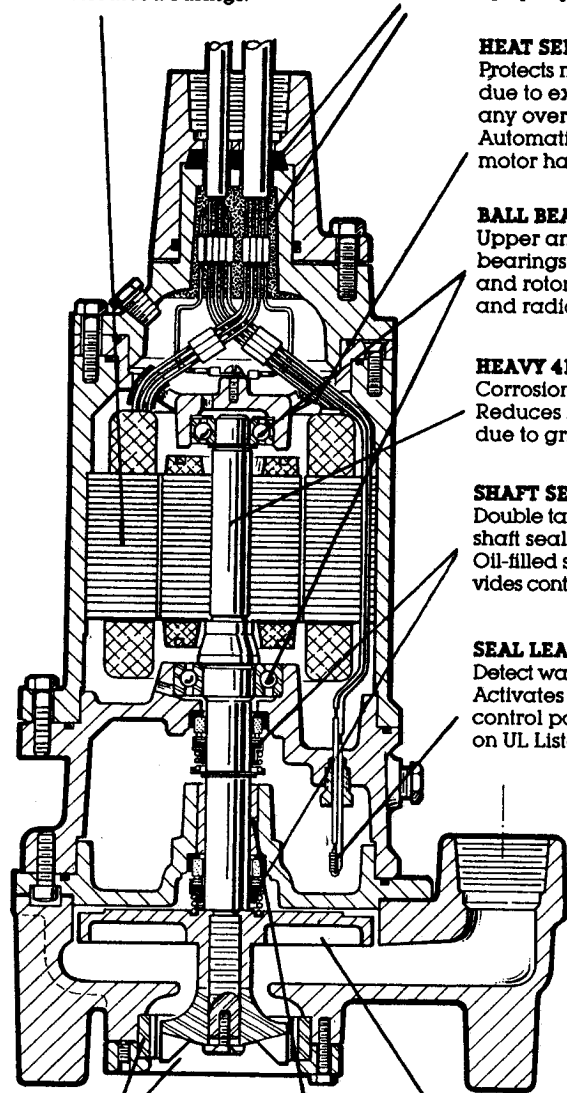
Double tandem mechanical shaft seals protect motor. Oil-filled seal chamber provides continuous lubrication.

## SEAL LEAK PROBES

Detect water in seal housing. Activates warning light in control panel. (Test resistor on UL Listed models.)

## VOLUTE CASE

Cast iron;  
1 1/4" vertical discharge.



## GRINDER ASSEMBLY

Grinder impeller and shredding ring are replaceable without dismantling pump. Constructed of 440 SST hardened to 56-60 Rockwell.

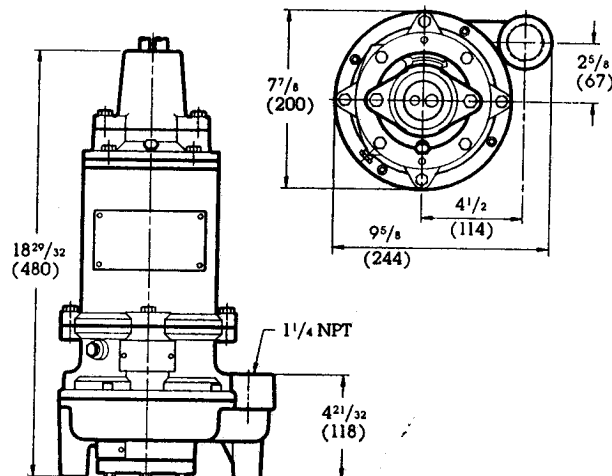
## SLEEVE BEARING

Takes radial load; provides flame path. (UL listed pumps only.)

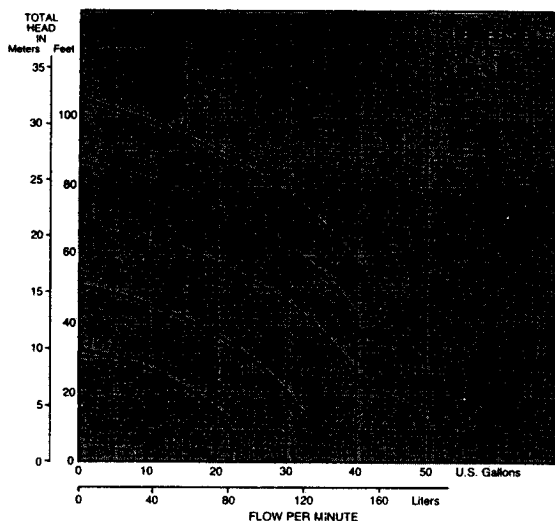
## IMPELLER

Bronze recessed impeller handles ground slurry without clogging or binding. Provides unobstructed flow passage. Reduces radial loads. Pumpout vanes help keep trash from seal; reduces pressure at seal faces.

## DIMENSIONS



## PERFORMANCE CURVE



K3368 12/99  
Printed in U.S.A.

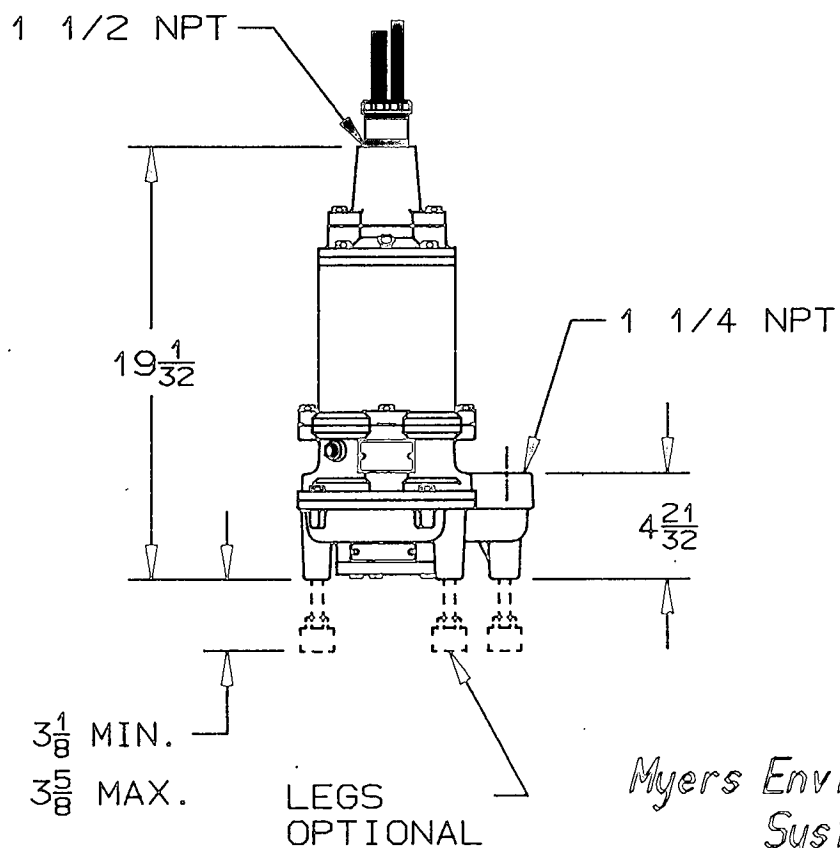
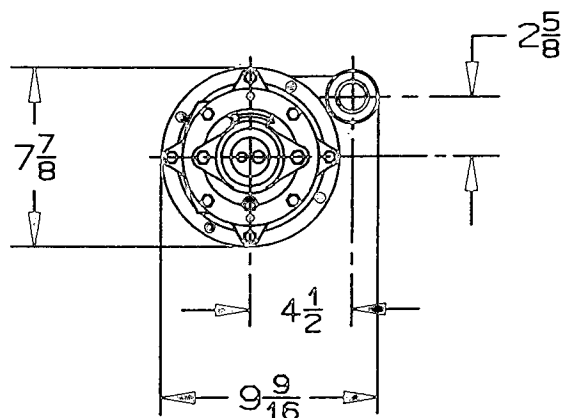
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Pentair Pump Group

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419/289-1144, FAX: 419/289-6658, [www.femyers.com](http://www.femyers.com)  
Myers (Canada), 269 Trillium Drive, Kitchener, Ontario N2G 4W5  
519/748-5470, FAX: 519/748-2553

AEC 01591

**Myers**

ES-104



*Myers Environmental  
Systems*

WG20, WGX20 SEWAGE  
GRINDER PUMP

SE 1-95 ES-104

# WGX20 EXPLOSION-PROOF GRINDER PUMP SPECIFICATIONS

**PUMP MODEL** - Pump shall be of the centrifugal type Myers model WGX20 or equal with an integrally built in grinder unit and submersible type motor. The grinder unit shall be capable of macerating all material in normal domestic and commercial sewage including reasonable amounts of foreign objects such as small wood, sticks, plastic, thin rubber, sanitary napkins, disposable diapers and the like to a fine slurry that will pass freely through the pump and 1-1/4" discharge pipe. Discharge shall be 1-1/4" NPT. Pump and motor assembly shall be UL listed for Class 1, Group D explosion-proof service.

**OPERATING CONDITIONS** - Pump shall have a capacity of 29 GPM at a total head of 38 feet and shall use a 2 HP motor operating at 3450 RPM.

**MOTOR** - Pump motor shall be of the submersible type rated 2 horsepower at 3450 RPM. Motor shall be for single phase 208 volts\_\_\_\_, 230 volts\_\_\_\_ or three phase 200 volts\_\_\_\_, 230 volts\_\_\_\_, 460 volts X or 575 volts\_\_\_\_. Single phase motors shall be of capacitor start, capacitor run, NEMA L type. Three phase motors shall be NEMA B type.

Stator winding shall be of the open type with Class F insulation good for 155°C (311°F) maximum operating temperature. Winding housing shall be filled with a clean high dielectric oil that lubricates bearings and seals and transfers heat from windings and rotor to outer shell. Air-filled motors which do not have the superior heat dissipating capabilities of oil-filled motors shall not be considered equal.

Motor shall have two heavy duty ball bearings to support pump shaft and take radial and thrust loads and a sleeve guide bushing directly above the lower seal to take radial load and act as flame path for seal chamber. Ball bearings shall be designed for 50,000 hours B-10 life. Stator shall be heat shrunk into motor housing.

A heat sensor thermostat shall be attached to top end of motor winding and shall be connected in series with the magnetic contactor coil in control box to stop motor if motor winding temperature reaches 221°F. Thermostat to reset automatically when motor cools. Two heat sensors shall be used on 3 phase motors.

The common motor pump and grinder shaft shall be of #416 stainless steel threaded to take pump impeller and grinder impeller.

**SEALS** - Motor shall be protected by two mechanical seals mounted in tandem with a seal chamber between the seals. Seal chamber shall be oil filled to lubricate seal face and to transmit heat from shaft to outer shell.

Seal face shall be carbon and ceramic and lapped to a flatness of one light band. Lower seal faces shall be \_\_\_\_\_ carbide (optional).

A double electrode shall be mounted in the seal chamber to detect any water entering the chamber through the lower seal. Water in the chamber shall cause a red light to turn on at the control box. This signal shall not stop motor but shall act as a warning only, indicating service is required.

**PUMP IMPELLER** - The pump impeller shall be of the recessed Myers type to provide an open unobstructed passage through the volute for the ground solids. Impeller shall be of 85-5-5 bronze and shall be threaded onto stainless steel shaft.

**GRINDER CONSTRUCTION** - Grinder assembly shall consist of grinder impeller and shredding ring and shall be mounted directly below the volute passage. Grinder impeller to be threaded onto stainless shaft and shall be locked with screw and washer. The shredding ring shall be pressed into iron holding flange for easy removal. Flange shall be provided with tapped back-off holes so that screws can be used to push the shredding ring from housing. All grinding of solids shall be from action of the impeller against the shredding ring.

Both grinder impellers and shredding ring shall be of 440C stainless steel hardened to 58-60 Rockwell C.

**CORROSION PROTECTION** - All iron castings shall be pre-treated with phosphate and chromic rinse and to be painted before machining and all machined surfaces exposed to the sewage water to be re-painted. All fasteners to be 302 stainless steel.

**BEARING END CAP** - Upper motor bearing cap shall be a separate casting for easy mounting and replacement.

**POWER CABLES** - Power cord and control cord shall be double sealed. The power and control conductor shall be single strand sealed with epoxy potting compound and then clamped in place with rubber seal bushing to seal outer jacket against leakage and to provide for strain pull. Cords shall withstand a pull of 300 pounds to meet U.L. requirements.

Insulation of power and control cords shall be type SOW/SOW-A. Both control and power cords shall have a green carrier ground conductor that attaches to motor frame.

**Myers**

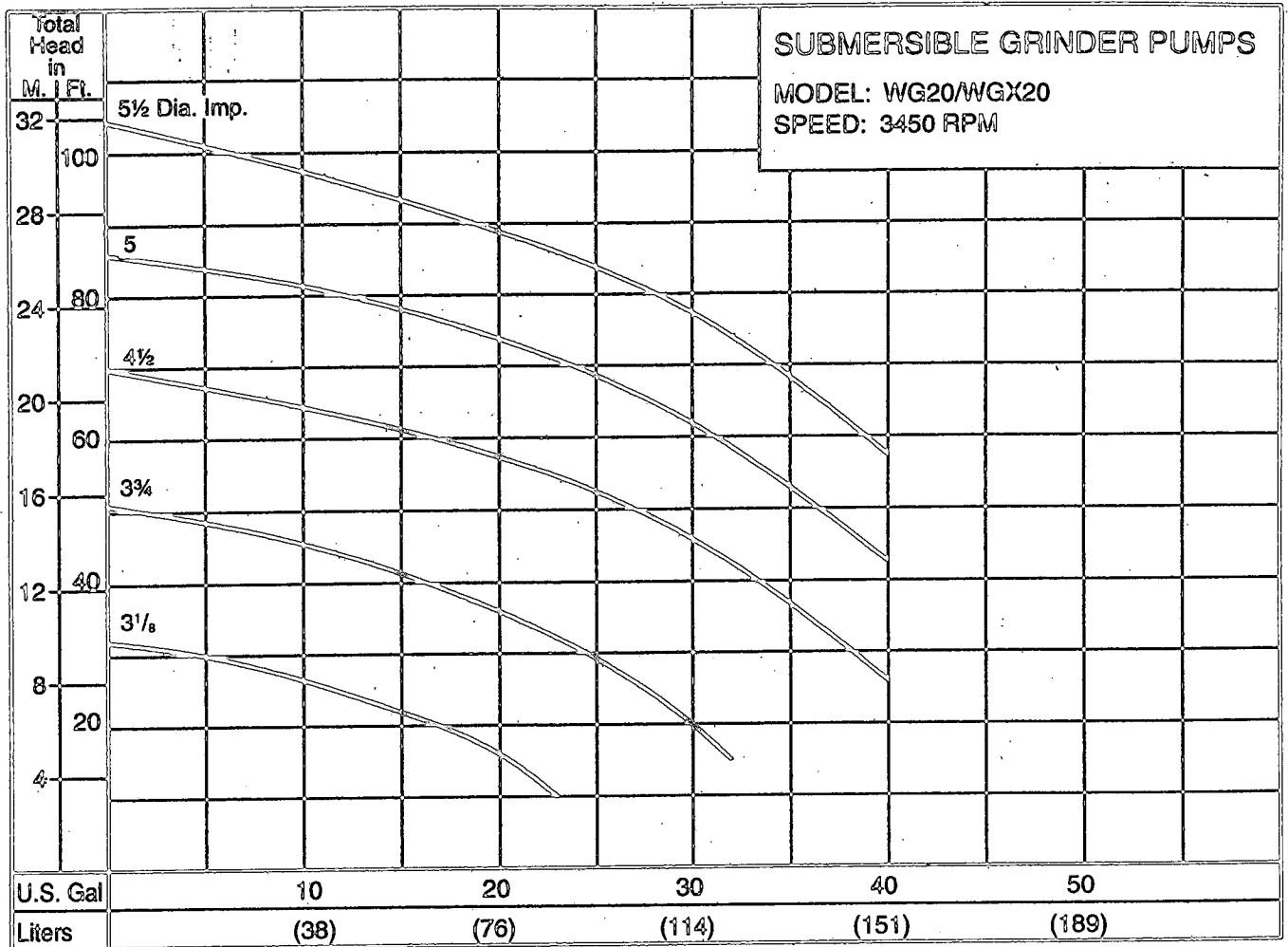
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K3483 8/00

AEC 01594



# Pump Performance



Available Models		Motor Electrical Data										
Standard	Explosion Proof	HP	Volts	Phase	Hertz	Start Amps	Run Amps	Run KW	Start KVA	Run KVA	NEC Code Letter	Service Factor
WG20-01-15	WG20-01-15	2	200	1	60	50.0	15.0	2.8	10.0	3.0	F	1.25
WG20-21-15	WG20-21-15	2	230	1	60	44.0	12.0	2.8	10.1	2.8	F	1.25
WG20-03-15	WG20-03-15	2	200	3	60	30.0	9.5	2.9	10.4	3.3	F	1.25
WG20-23-15	WG20-23-15	2	230	3	60	27.5	8.4	2.9	11.0	3.3	F	1.25
WG20-43-15	WG20-43-15	2	460	3	60	13.8	4.2	2.9	11.0	3.3	F	1.25

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# **SPECIFICATIONS FOR 2 HORSEPOWER EXPLOSION-PROOF GRINDER PUMP LIFT-OUT CHECK VALVE RAIL SYSTEMS**

**GENERAL** - Furnish and install a complete grinder pump system consisting of: 2 (qty) Myers WG120-43-15 (model number) submersible grinder pump(s) and RWGX-125 lift-out rail system(s), valves, controls, access cover(s) and all other appurtenances to make a complete system. The lift-out rail systems shall be of non-sparking design and shall be listed for explosion-proof service.

**RAIL ASSEMBLY** - The lift-out rail system assembly shall permit easy removal and installation of the pump and lower check valve without the necessity of personnel entering the wetwell. Bronze guide brackets with guide yokes of sufficient bearing strength to prevent binding shall bolt to the pump. The yokes shall mate over guide rails of a minimum of 1 inch pipe running between an upper rail support and the discharge case. A lower discharge nozzle, downstream from the check valve, shall be guided into a chamfered cavity in the discharge case. A shoulder on the nozzle shall bottom on the discharge case to insure alignment for a leak tight seal. Dual "O" rings shall effect a hydraulic seal around the nozzle when it is in its operating position. A brace, easily removable from the top of the wetwell, shall be provided to lock the parts together and to prevent line surges from breaking the seal and allowing leakage. The discharge case shall have a discharge opening for installation of discharge piping.

The discharge case shall be securely bolted to the floor of the wetwell so that slight deflection caused by the discharge pipe will not cause the quick-connect pump flange to leak.

All guides, brackets and hold-downs shall be of non-sparking bronze construction.

**CHECK VALVE** - A heavy duty spring loaded all rubber flapper type check valve with cast iron body shall be an integral part of the discharge seal assembly and lift out with the pump assembly. The valve design shall be such to allow for operation when negative heads, of up to 5 feet, are encountered. The valve shall be designed to operate at all pressures in the sewer system created by the grinder pumps.

A flat set stainless steel spring, integrally molded into the Buna N rubber flapper, shall be furnished in order to prevent collection of debris in the check valve. All fasteners shall be stainless steel.

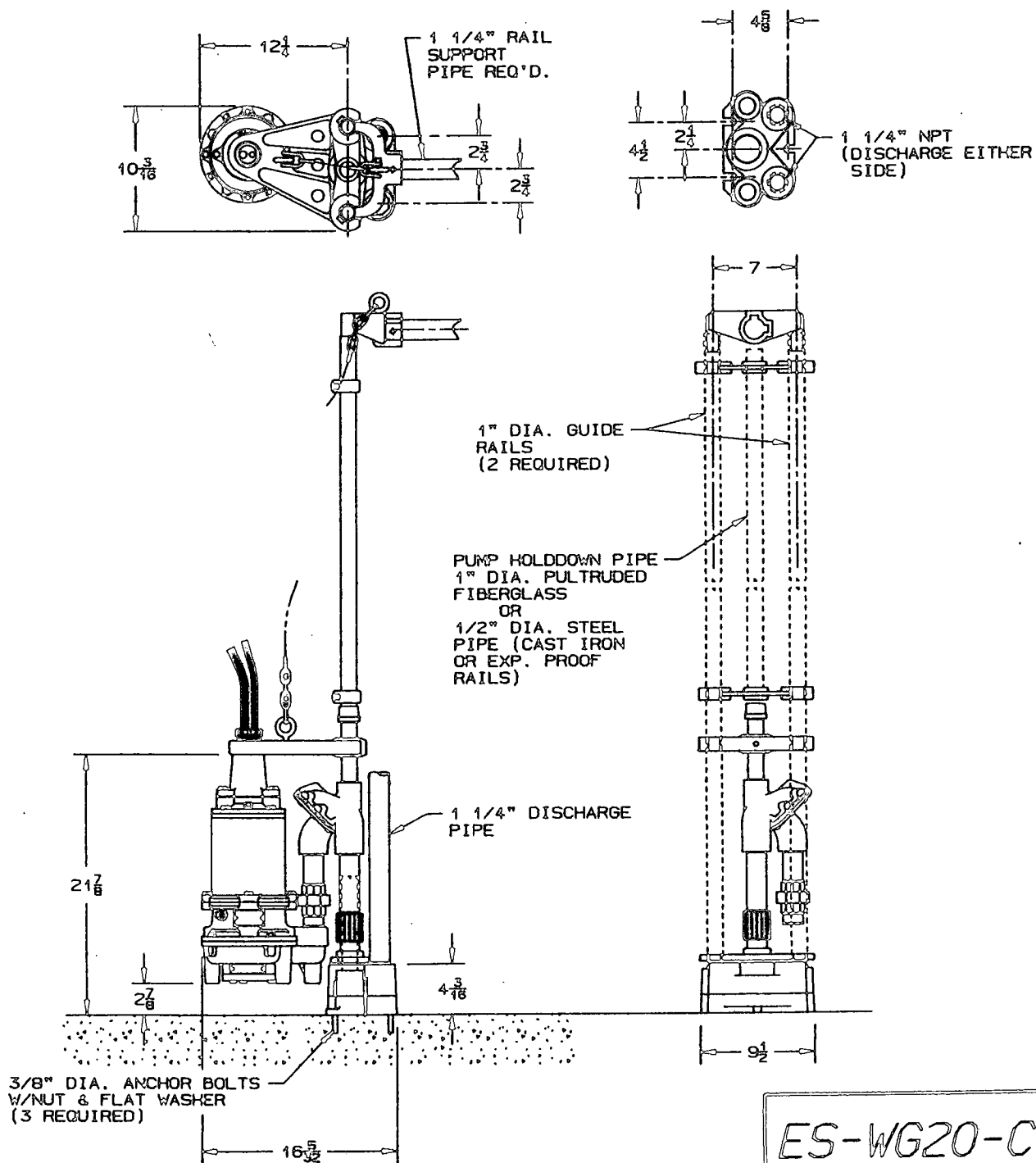
**LIFTING CHAIN** - An adequate length of \_\_\_\_\_ galvanized or X stainless steel lifting chain shall be supplied for removing the pump. The chain shall be minimum 1/4" welded link type, or of adequate strength, required to effectively support the weight of the pump assembly during removal or installation.

# Myers®

## WG20 and WGX20

2HP SUBMERSIBLE GRINDER WASTEWATER PUMP  
1 1/4" DISCHARGE STANDARD (WG20)  
AND EXPLOSION PROOF (WGX20)

SLIDE RAIL DIMENSIONS  
(RWG/RWX-125 SHOWN)



# Mercury Control Level Switch

AN ADJUSTABLE STABILIZATION WEIGHT IS FASTENED TO THE CABLE BY MEANS OF A NYLON 66 STRAIN RELIEF CONNECTOR AND BUSHING.

UL AND CSA APPROVED CONSTANT SERVICE CORD APPROVED FOR WET WELL APPLICATIONS (16/2)

A FUNNEL MOUTH CABLE ENTRY ON THE BOTTOM OF THE WEIGHT ALLOWS LONG RADIUS BENDING OF THE CABLE TO VIRTUALLY ELIMINATE WIRE FLEXING FATIGUE.

INTERNAL STABILIZATION WEIGHT KEEPS THE SWITCH BOUNCE TO A MINIMUM IN TURBULENT WET WELLS. THIS WILL REDUCE CONTACT CHATTER AND EXTEND SWITCH LIFE.

DENSE POLYURETHANE FOAM FLOAT MOLDED UNDER PRESSURE, INSURES TOTAL PENETRATION AND WATERPROOF ENCAPSULATION.

THE MERCURY SWITCH IS CUSTOM MADE FOR LEVEL SWITCH APPLICATIONS. THE CONTACTS AND MERCURY SLUG ARE DESIGNED TO WITHSTAND CONTACTOR IN-RUSH CURRENT WITHOUT BURNING OR BOUNCE. (SWITCH RATED AT 2 A CONTINUOUS 115/230 V)

THE INTERNAL WEIGHT ALLOWS FOR A LONGER RADIUS BEND WHICH EXTENDS CORD LIFE AND ALLOWS FOR A MORE POSITIVE SWITCHING EVEN WHEN FLOATING DEBRIS IS IN THE BASIN.

AVAILABLE IN NORMALLY OPEN OR NORMALLY CLOSED.

## S P E C I F I C A T I O N S

**EXTERNAL WEIGHT** -- EXTERNAL WEIGHT IS ADJUSTABLE, CAST IRON, PAINTED AND FASTENED TO CABLE BY MEANS OF NYLON 66 STRAIN RELIEF CONNECTOR AND BUSHING. THE WEIGHT HAS A FUNNEL MOUTH CABLE ENTRY ON THE BOTTOM WHICH ALLOWS FOR A LONG RADIUS BENDING OF THE CORD THAT VIRTUALLY ELIMINATES WIRE FLEXING FATIGUE. THE WEIGHT IS APPROX. 28 OZ. (2 1/4" X 1 1/5").

SWITCHING EVEN WHEN FLOATING DEBRIS IS IN THE BASIN.

**CORD** -- THE CORD IS 16/2 SJ00W (CPE) UL AND CSA APPROVED FOR WET WELL APPLICATION, CONSTANT SERVICE, 300 VOLT, BLACK AND LENGTH REQUIRED.

**SWITCH** -- MERCURY SWITCH IS CUSTOM MADE FOR LEVEL CONTROL SWITCH APPLICATIONS. THE CONTACTS AND MERCURY SLUG ARE DESIGNED TO WITHSTAND CONTACTOR INRUSH CURRENT WITHOUT BURNING OR BOUNCE. THE SWITCH IS FILLED WITH HIGH GRADE MERCURY, FILLED WITH INERT GAS AND HERMETICALLY SEALED. THE PROPER AMOUNT OF MERCURY IS CAREFULLY CONTROLLED TO INSURE MAXIMUM CONTACT RATING WITHOUT

SACRIFICING ENDURANCE FROM PHYSICAL SHOCK. THE MERCURY AND CONTACTS ARE CONTAINED IN A HIGH QUALITY GLASS ENVELOPE WHICH INSURES THAT NO WETTING OF THE SWITCH WALLS WILL OCCUR (WETTING IS WHEN MERCURY ADHERES TO THE WALL OF THE SWITCH ENVELOPE ALLOWING SMALL AMOUNTS OF CURRENT TO BE CONDUCTED, COMMON IN STEEL TYPE SWITCHES). 2 AMP RATING CONTINUOUS 115/230 VOLT.

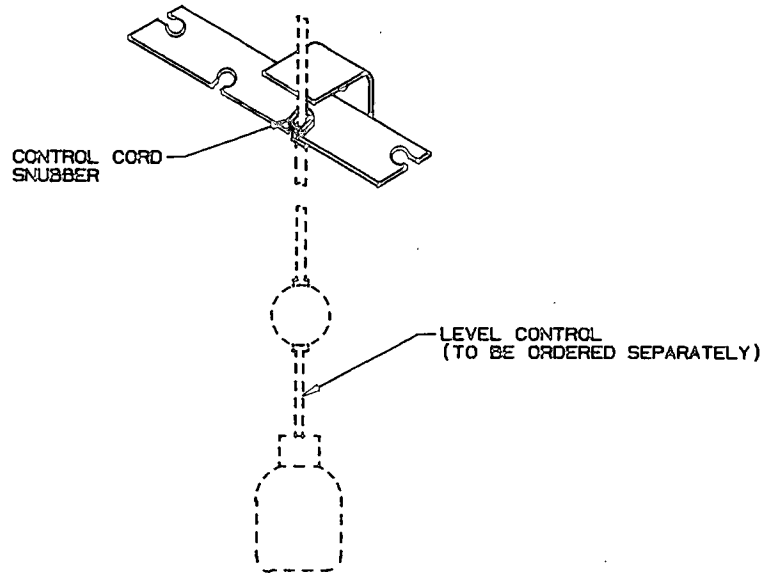
**INTERNAL WEIGHT** -- INTERNAL STABILIZATION WEIGHT KEEPS SWITCH BOUNCE TO A MINIMUM IN TURBULENT, WET WELLS, THIS CAN REDUCE CONTACT CHATTER AND EXTEND THE PUMP AND SWITCH LIFE. THE INTERNAL WEIGHT ALLOWS FOR A LONG RADIUS BEND WHICH EXTENDS CORD LIFE AND ALLOWS FOR A MORE POSITIVE

**FLOAT** -- THE FLOAT IS A DENSE, SOLID POLYURETHANE MATERIAL MOLDED UNDER PRESSURE WHICH INSURES A TOTAL PENETRATION AND WATERPROOF ENCAPSULATION. THE COLOR IS ORANGE AND THE TOTAL DISPLACEMENT IS 15 OZ. APPROX. 3" X 5" PEAR SHAPED.

**Myers**

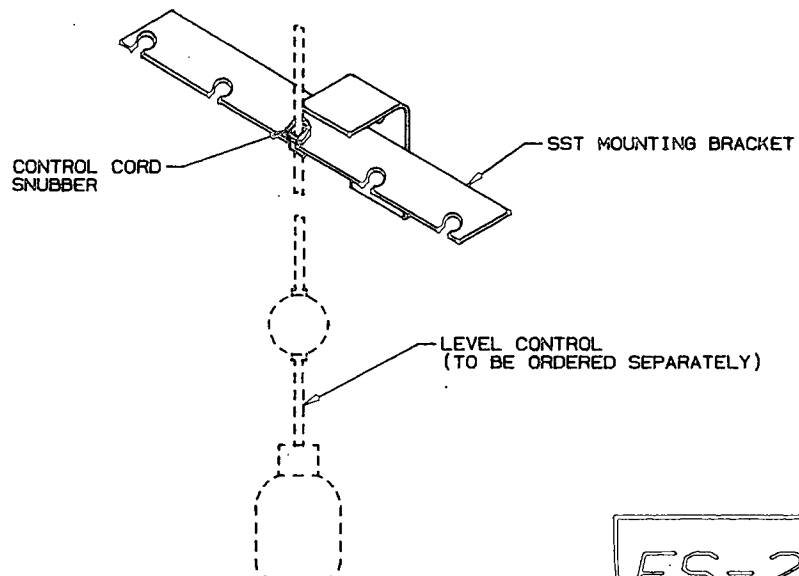
## CSB4-SS

FLOAT BRACKET FOR MOUNTING UP  
TO (4) FOUR CONTROLS



## CSB5-SS

FLOAT BRACKET FOR MOUNTING UP  
TO (5) FIVE CONTROLS

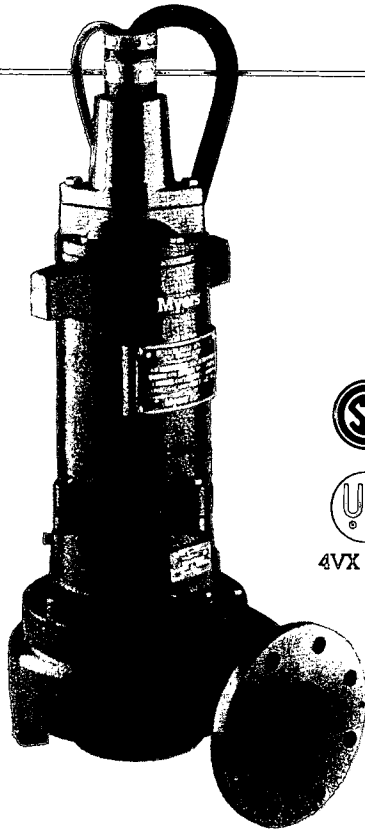


ES-2365A

## Effluent Pump Station B Product Information & Specifications

# 4V ~~and 4VX~~ (EXPLOSION-PROOF)

4" Non-clog Wastewater Pumps  
Standard (4V) and Explosion-proof (4VX) Construction



4VX only

**THE 4V AND 4VX (EXPLOSION-PROOF) SUBMERSIBLE WASTEWATER PUMPS PASS A FULL 3" SPHERICAL SOLID AND ARE THE IDEAL CHOICE WHEN SELECTING A PUMP FOR YOUR NEXT APPLICATION.** Myers rounded port, 2-vane, enclosed impellers prevent solids from binding or clogging and offer high operating efficiencies to cut your pumping costs. The 4V series modified constant velocity volute case provides smooth operation over an extended portion of the performance curve for extended seal and bearing life. For use in municipal lift stations, treatment plants and industrial waste applications. Myers offers a complete line of wastewater pumps, lift-out rail assemblies, controls and accessories to meet your needs. Call your Myers distributor, or the Myers Ohio sales office at 419/289-1144 for more details.

## ADVANTAGES BY DESIGN

**HIGH EFFICIENCY HYDRAULIC DESIGN CUTS PUMPING COSTS AND EXTENDS LIFE OF FLUID END COMPONENTS.**

- Two-vane, rounded port, enclosed type impellers handle 3" solids with ease at high operating efficiencies.
- Modified constant velocity volute offers quiet operation, low radial loads over extended portion of performance curve.

**DURABLE MOTOR WILL DELIVER MANY YEARS OF RELIABLE SERVICE.**

- Oil-filled motor for maximum heat dissipation and constant bearing lubrication.
- Heat sensor thermostats imbedded in windings protect motor from over heat conditions.
- Seal leak probes warn of moisture entry; helps prevent costly motor burn-out.
- Double tandem shaft seals prevent sewage from entering motor.
- Power and control cables are double sealed with epoxy and compression grommet.

**AVAILABLE WITH OPTIONAL U.L. APPROVAL FOR USE IN CLASS 1, GROUP D HAZARDOUS LOCATIONS (4VX ONLY).**

□ 4VX file number E 68118.

□ Non-sparking rail system file number E 76984N.

## PRODUCT CAPABILITIES

Capacities To	715 GPM	45.1 L/S
Heads To	59 ft.	17.9 m
Solids Handling Capacity	3 in. dia.	76 mm dia.
Liquids Handling	raw unscreened sewage, effluent, storm water	
Intermittent Liquid Temp.	up to 140°F	up to 60°C
Winding Insulation Temp. (Class B)	266°F	130°C
Available Motors (Single phase motors are capacitor start type. Myers control panels or capacitor kits are required for proper operation and warranty.)	1750 RPM: 3-5 HP, 230V, 1Ø, 60 Hz 3-10 HP, 208, 230, 460, 575V, 3Ø, 60 Hz 1150 RPM: 1-2 HP, 208, 230V, 1Ø, 60 Hz and 208, 230, 460, 575V, 3Ø, 60 Hz	
Std. Third Party Approvals	CSA	
Optional Approvals	UL Class 1, Group D (4VX only) file E68118	
Acceptable pH Range	6-9	
Specific Gravity	.9-1.1	
Viscosity	28-35 SSU	
Discharge, Horizontal	4 in.	101.6 mm
Flanged Centerline	125 lb. ANSI	

NOTE: Consult factory for applications outside of these recommendations.

## Construction Materials

Motor Housing, Seal Housing, Cord Cap and Volute Case	cast iron, Class 30 ASTM A48-76
Enclosed 2-Vane Impeller	ductile iron, Class 65 ASTM A536-80
Power and Control Cord	25 ft. SOW/SOW-A
Mechanical Seals Standard Optional	double tandem, type 21 carbon and ceramic lower tungsten carbide
Pump, Motor Shaft	416 SST
Fasteners	300 Series SST
Volute Wear Ring	brass

WHERE INNOVATION MEETS TRADITION

# Myers®

Pentair Pump Group

ISO 9001 Certified

AEC 01601

# 4V and 4VX (EXPLOSION-PROOF)

4" Non-clog Wastewater Pumps  
Standard (4V) and Explosion-proof (4VX) Construction

**POWER & CONTROL CORDS**  
SOW-A, UL and CSA  
approved oil-resistant  
cable.

**CABLE ENTRY SYSTEM**  
Provides double seal  
protection. Cable jacket  
sealed by compression  
grommet. Individual wires  
sealed by epoxy potting.

**HEAT SENSOR**  
Protects motor from burn-  
out due to excessive heat  
from any overload condition.  
Automatically resets when  
motor has cooled.

**MOTOR STATOR**  
Heat shrunk into housing  
for perfect alignment and  
best heat transfer. Oil-filled  
motor conducts heat and  
lubricates bearings.

**BALL BEARINGS**  
Upper and lower ball  
bearings support shaft and  
rotor and take axial and  
radial loads.

**SHAFT SEALS**  
Double tandem mechanical  
shaft seals protect motor.  
Oil-filled seal chamber pro-  
vides continuous lubrication.

**SEAL LEAK PROBES**  
Detect water in seal housing.  
Activate warning light in  
control panel. (Test resistor  
on UL listed models.)

**HEAVY 416  
SST SHAFT**  
Corrosion  
resistant.

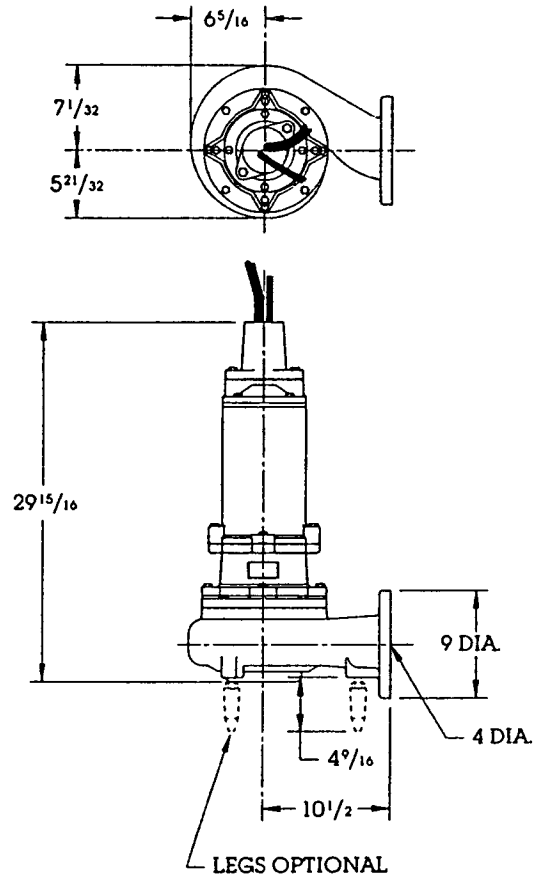
**SLEEVE BEARING**  
Takes radial shock load;  
provides flame path. (UL  
listed pumps only.)

**VOLUTE CASE**  
Modified constant velocity  
volute handles 3" solids. 4"  
ANSI 125 lb. flange.

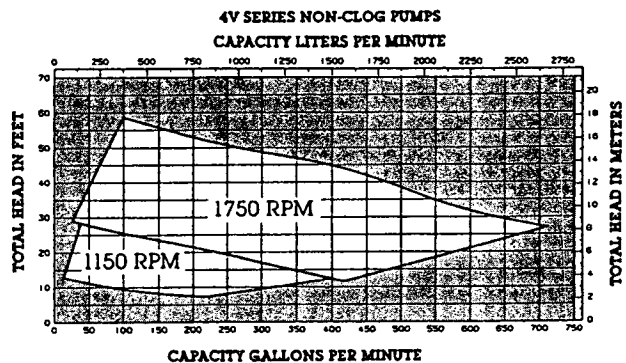
**HIGH EFFICIENCY IMPELLER**  
2-vane with rounded ports.  
Handles 3" solids. Pump out  
vanes help keep trash from  
seal; reduces pressure at  
seal faces.

**BRASS WEAR RING**  
Prevents rust build-up and  
reduces leakage and wear.  
Replaceable to restore  
original running clearances  
and pump efficiencies.

## DIMENSIONS



## PERFORMANCE CURVE



K3374 8/99  
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**Myers®**  
Pentair Pump Group

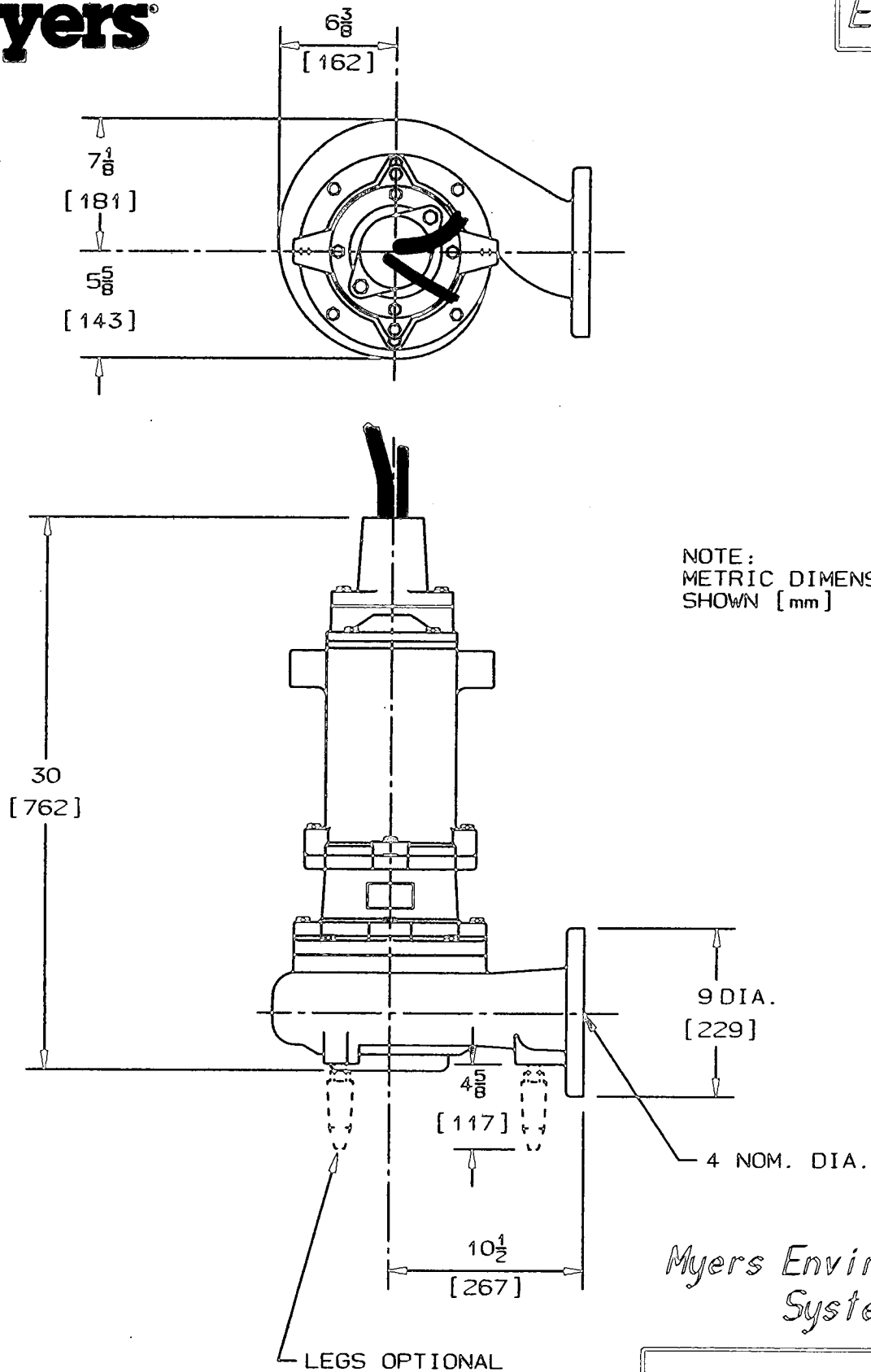
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419/289-1144, FAX: 419/289-6658, [www.femyers.com](http://www.femyers.com)  
Myers (Canada), 269 Trillium Drive, Kitchener, Ontario N2G 4W5  
519/748-5470, FAX: 519/748-2553

AEC 01602



# Myers®

ES-367



NOTE:  
METRIC DIMENSIONS  
SHOWN [mm]

*Myers Environmental  
Systems*

"4V" SERIES NON-CLOG

SE 5-91

ES-367

# 4V Series

## Non-Clog Submersible Pumps

### Specifications

**PUMP MODEL** - Pump shall be Myers Model Number 4V Non-Clog Submersible Pump with 2 vane enclosed impeller. All openings in pump impeller and volute case shall be large enough to pass a 3" diameter sphere. Discharge flange shall be four (4) inch standard.

**OPERATING CONDITIONS** - Pump shall have a capacity of 185 GPM at a total head of 30 feet and shall use a 5 HP motor operating at 1,750 RPM.

**MOTOR** - Pump motor shall be of the sealed submersible type rated \_\_\_\_\_ HP at \_\_\_\_\_ RPM 60 Hertz. Motor shall be for single phase 230 volts \_\_\_\_\_ or three phase 200 volts \_\_\_\_\_, 230 volts \_\_\_\_\_, 460 volts X, or 575 volts \_\_\_\_\_. Single phase motors shall be of the capacitor start, capacitor run, NEMA L type. Three phase motors shall be NEMA B type.

Stator winding shall be of the open type with Class F inverter duty insulation good for 155°C (311°F) maximum operating temperature. Winding housing shall be filled with a clean high dielectric oil that lubricates bearings and seals and transfers heat from windings and rotor to outer shell. Air-filled motors which do not have the superior heat dissipating capabilities of oil-filled motors shall not be considered equal.

Motor shall have two heavy duty ball bearings to support pump shaft and take radial and thrust loads and a sleeve guide bushing directly above the lower seal to take radial load and act as flame path for seal chamber. Ball bearings shall be designed for 50,000 hours B-10 life. Stator shall be heat shrunk into motor housing.

A heat sensor thermostat shall be attached to and imbedded in the winding and be connected in series with the motor starter contractor coil to stop motor if temperature of winding is more than 120°C (248°F). Thermostat to reset automatically when motor cools to safe operating temperature. Three heat sensors to be used on 3 phase motors. The common pump, motor shaft shall be of 416 stainless steel.

**SEALS** - Motor shall be protected by two mechanical seals mounted in tandem with a seal chamber between the seals. Seal chamber shall be oil filled to lubricate seal face and to transmit heat from shaft to outer shell.

Seal face shall be carbon and ceramic and lapped to a flatness of one light band. Lower seal faces shall be \_\_\_\_\_ carbide (optional).

A double electrode shall be mounted in the seal chamber to detect any water entering the chamber through the lower seal. Water in the chamber shall cause a red light to turn on at the control box. This signal shall not stop motor but shall act as a warning only, indicating service is required.

**IMPELLER** - The impeller shall be cast ductile iron and of the 2 vane non-clog enclosed type. Vane inlet tips shall be carefully rounded to prevent stringy material from catching in vanes. Pump-out vane shall be used in front and back chamber. Impeller shall be dynamically balanced. Impeller shall be driven by stainless steel shaft key and impeller held in place with lock screw and washer. Impeller and motor shall lift off of case as a unit without disturbing discharge piping.

(Over)

**PUMP CASE** - The volute case shall be cast iron and have a flanged center line discharge. Discharge flange shall be 4" standard with bolt holes straddling center line. A bronze wear ring shall be pressed into case for guiding impeller neck and to prevent corrosion freeze up. Wear ring shall be held from rotating by locking with stainless steel set screw in end of ring.

**PUMP AND MOTOR CASTING** - All castings shall be of high tensile cast iron and shall be treated with phosphate and chromate rinse.

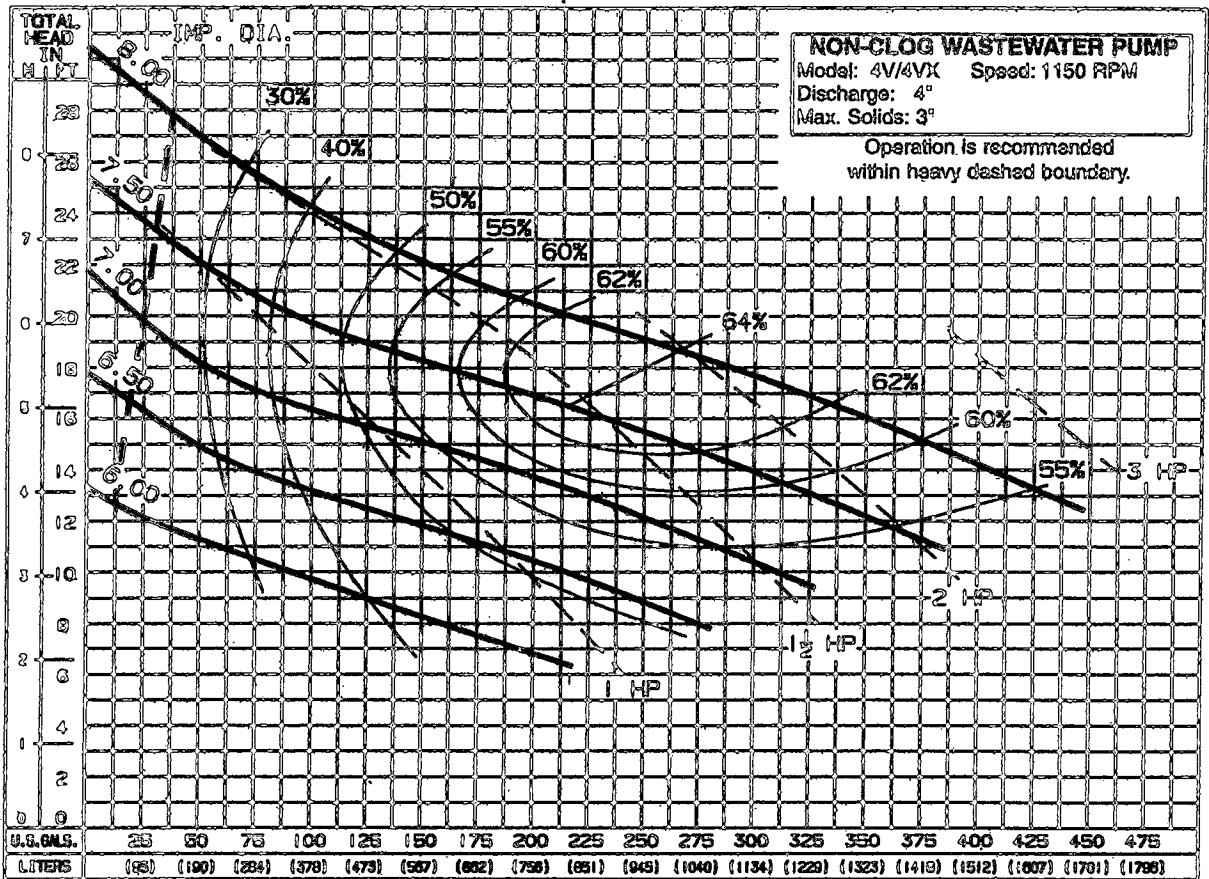
All fasteners shall be 302 stainless steel.

**BEARING END CAP** - Upper motor bearing cap shall be a separate casting for easy mounting and replacement.

**POWER CABLES** - Power cord and control cord shall be double sealed. The power and control conductor shall be single strand sealed with epoxy potting compound and then clamped in place with rubber seal bushing to seal outer jacket against leakage and to provide for strain pull. Cords shall withstand a pull of 300 pounds to meet U.L. requirements.

Insulation of power and control cords shall be type SOW/SOW-A. Both control and power cords shall have a green carrier ground conductor that attaches to motor frame.

# Pump Performance

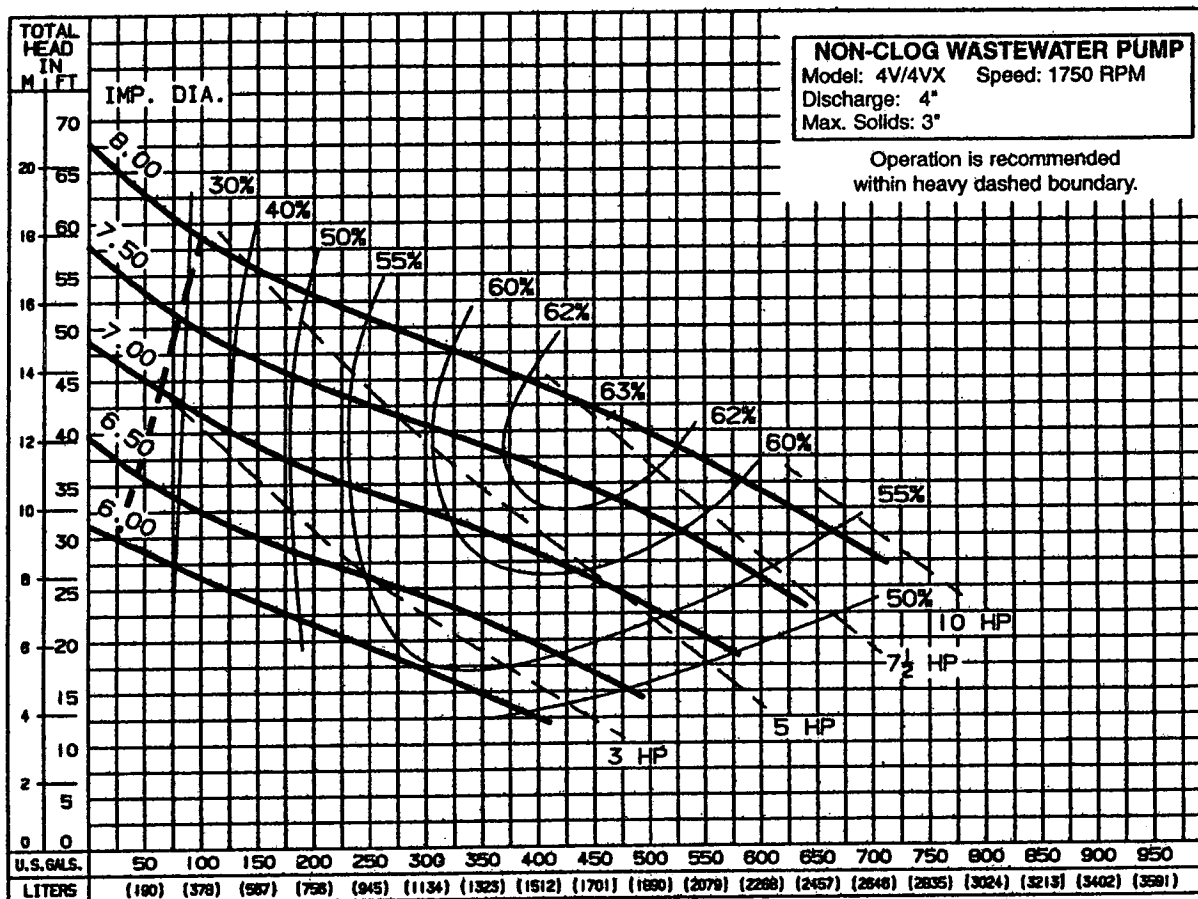


Pump performance is based on clear water (1.0 specific gravity @ 68°F) and pump fluid end (hydraulic) efficiency. Motor data based on 40°C ambient temperature.

Available Models		Motor Electrical Data												
Standard	Emulation Model	HP	Volts	Phase	Hertz	Start Amps	Run Amps	Service Factor Amps	Run KW	Service Factor KW	Start KVA	Run KVA	NEC Code Letter	Service Factor
4V10M6-21	4VX10M6-21	1	230	1	60	35	9	10.8	1.5	1.9	8.1	2.1	K	1.2
4V10M6-03	4VX10M6-03	1	200	3	60	23.8	7.4	8.9	1.8	2.3	8.3	2.6	K	1.2
4V10M6-23	4VX10M6-23	1	230	3	60	20.7	6.4	7.8	1.8	2.3	8.3	2.6	K	1.2
4V10M6-43	4VX10M6-43	1	460	3	60	10.4	3.2	3.9	1.8	2.3	8.3	2.6	K	1.2
4V10M6-53	4VX10M6-53	1	575	3	60	8.3	2.6	3.1	1.8	2.3	8.3	2.6	K	1.2
4V15M6-21	4VX15M6-21	1.5	230	1	60	42	11	13.2	1.9	2.4	9.7	2.5	H	1.2
4V15M6-03	4VX15M6-03	1.5	200	3	60	33.4	9.8	11.8	2.2	2.8	11.6	3.3	J	1.2
4V15M6-23	4VX15M6-23	1.5	230	3	60	29	8.5	10.2	2.2	2.8	11.6	3.3	J	1.2
4V15M6-43	4VX15M6-43	1.5	460	3	60	14.5	4.2	5.1	2.2	2.8	11.6	3.3	J	1.2
4V15M6-53	4VX15M6-53	1.5	575	3	60	11.6	3.3	4	2.2	2.8	11.6	3.3	J	1.2
4V20M6-21	4VX20M6-21	2	230	1	60	60	18	21	2.8	3.5	19.5	4.2	H	1.2
4V20M6-03	4VX20M6-03	2	200	3	60	56	12	14.5	2.4	3.6	19.5	4.2	L	1.2
4V20M6-23	4VX20M6-23	2	230	3	60	49	10.5	12.6	2.4	3.6	19.5	4.2	L	1.2
4V20M6-43	4VX20M6-43	2	460	3	60	24.5	5.2	6.3	2.4	3.6	19.5	4.2	L	1.2
4V20M6-53	4VX20M6-53	2	575	3	60	19.6	4.2	5	2.4	3.6	19.5	4.2	L	1.2
4V30M6-21		3	230	1	60	60	21	21	3.8	3.8	13.8	4.8	H	1.0
4V30M6-03		3	200	3	60	56	16.8	16.8	3.8	3.8	19.5	5.6	H	1.0
4V30M6-23		3	230	3	60	49	14	14	3.8	3.8	19.5	5.6	H	1.0
4V30M6-43		3	460	3	60	24.5	7	7	3.8	3.8	19.5	5.6	H	1.0
4V30M6-53		3	575	3	60	19.6	5.6	5.6	3.8	3.8	19.5	5.6	H	1.0

Motor Efficiencies and Power Factor									
Motor Efficiency %					Power Factor %				
HP	Phase	Service Factor Load	100% Load	75% Load	50% Load	Service Factor Load	100% Load	75% Load	50% Load
1	1	59.5	58	53	44.5	75	72	66	58
1	3	64	61.5	55.5	46	75.5	71	62	48.5
1.5	1	56	59	55	47	80	77	73	67.5
1.5	3	68	67	63.5	56	69.5	66	59.5	50
2	1	61	59	54	45.5	73	68	60	51
2	3	71	69	64	54	71.5	58.5	51	43
3	1	60	60	60	54	78	78	71	60
3	3	73	73	70.5	64	69	69	62	51

# Pump Performance



Pump performance is based on clear water (1.0 specific gravity @ 68°F) and pump fluid end (hydraulic) efficiency. Motor data based on 40°C ambient temperature.

Available Models		Motor Electrical Data												
Standard	Explosion Proof	HP	Volts	Phase	Hertz	Start Amps	Run Amps	Service Factor	Run KW	Service Factor	Start KVA	Run KVA	NEC Code Letter	Service Factor
4V30M4-21	4VX30M4-21	3	230	1	60	101	17.5	21	2.1	2.5	23.2	4.0	J	1.2
4V30M4-03	4VX30M4-03	3	200	3	60	68.7	15	18	3.5	4.3	23.0	5.0	G	1.2
4V30M4-23	4VX30M4-23	3	230	3	60	58	12	14.4	3.5	4.3	23.0	5.0	G	1.2
4V30M4-43	4VX30M4-43	3	460	3	60	29	6	7.2	3.5	4.3	23.0	5.0	G	1.2
4V30M4-53	4VX30M4-53	3	575	3	60	21.3	5	6	3.5	4.3	23.0	5.0	G	1.2
4V50M4-21	4VX50M4-21	5	230	1	60	141	34	41	6.3	7.7	32.4	7.8	H	1.2
4V50M4-03	4VX50M4-03	5	200	3	60	111	21.6	26	5.6	6.9	38.4	7.2	H	1.2
4V50M4-23	4VX50M4-23	5	230	3	60	96	18	21.6	5.6	6.9	38.4	7.2	H	1.2
4V50M4-43	4VX50M4-43	5	460	3	60	48	9	10.8	5.8	6.9	38.4	7.2	H	1.2
4V50M4-53	4VX50M4-53	5	575	3	60	39	7.2	8.6	5.6	6.9	38.4	7.2	H	1.2
4V75M4-03	4VX75M4-03	7.5	200	3	60	172	32.2	37	8.0	9.9	59.5	11.1	J	1.2
4V75M4-23	4VX75M4-23	7.5	230	3	60	150	28	32	8.0	9.9	59.7	11.1	J	1.2
4V75M4-43	4VX75M4-43	7.5	460	3	60	74.8	14	16	8.0	9.9	59.7	11.1	J	1.2
4V75M4-53	4VX75M4-53	7.5	575	3	60	67.2	11.2	13	8.0	9.9	66.8	11.1	K	1.2
4V100M4-03		10	200	3	60	172	37	37	10.1	10.1	59.5	12.8	G	1.0
4V100M4-23		10	230	3	60	150	32	32	10.1	10.1	59.7	12.8	G	1.0
4V100M4-43		10	460	3	60	74.8	16	16	10.1	10.1	59.7	12.8	G	1.0
4V100M4-53		10	575	3	60	67.2	13	13	10.1	10.1	66.8	12.8	H	1.0

Motor Efficiencies and Power Factor									
Motor Efficiency %						Power Factor %			
HP	Phase	Service Factor Load	100% Load	75% Load	50% Load	Service Factor Load	100% Load	75% Load	50% Load
3	1	71	70	67	59	52	51	49	45
3	3	74	73.5	69.5	61.5	73	70.5	62.5	52
5	1	67.5	68	65	56	83	81	73	62.5
5	3	77	77	77	70.5	80	77.5	71	59.5
7.5	3	75	75	72.5	65	77	72	62	49.5
10	3	75	75	75	71	79	79	72	58

# Specifications For 4" Non-Clog Sewage Pump Lift-Out Check Valve Rail Systems (For Pump Models 4R, 4V, 4VH, 4RH, 4RC, 4VC)

**GENERAL** - Furnish and install a complete non-clog sewage pumping system consisting of: 2 (qty) Myers 4V50M4-43 (model number) submersible non-clog sewage pumps and SRA-400 lift-out check valve rail systems, shutoff valves, controls, access cover(s) and all other appurtenances to make a complete system.

**COMPONENTS** - Each lift-out system shall consist of a discharge and rail support elbow that bolts to bottom of wetwell, a combination check valve and seal flange that mounts to pump, top rail support guides, and guide/support brackets that mount to pump. All exposed nuts, bolts, and fasteners shall be 300 series stainless steel.

**CHECK VALVE** - The lift-out check valve shall be of the swing clapper type with rubber facing. A bronze seat bushing shall be mounted in face of valve to provide a corrosion-proof seat. The clapper shall be mounted on a stainless steel shaft and shall be spring loaded to prevent slamming when closing.

The open face of the valve shall be tapered and have a holding groove machined in the face to hold a sealing o-ring. The tapered seat shall allow pump to be nearly sealed at discharge elbow before sealing faces make full contact. A guide plate and adjustable guide bar shall fasten to the top of the pump to insure proper alignment and support of the pump.

The check valve shall lift out with pump to allow for inspection, cleaning or maintenance of the valve outside the wetwell. No additional check valve shall be required in the discharge piping. Lift-out systems which do not incorporate a lift-out check valve as an integral part of the lift-out assembly shall not be considered equal.

**ELBOW** - Discharge elbow shall be 4" x 4" and shall be integrally cast into the base assembly.

**GUIDE RAILS** - Two rail pipes shall be used to guide the pump from the surface to the discharge base connection. The guide rails shall be 1-1/2" schedule 40        galvanized or X stainless steel pipe. The weight of the pump shall bear solely on the discharge base and not on the guide rails. Rail systems which require the pump to be supported by legs which might interfere with the flow of solids into the pump suction will not be considered equal. The guide rails shall be firmly attached to the access hatch frame. Systems deeper than 18 feet shall use an intermediate guide for each 18 feet of wetwell depth.

**LIFTING CHAIN** - An adequate length of        galvanized or X stainless steel lifting chain shall be supplied for removing pump. The chain shall be of sufficient length and shall include an adequate number of lifting rings to provide ease of pump removal.

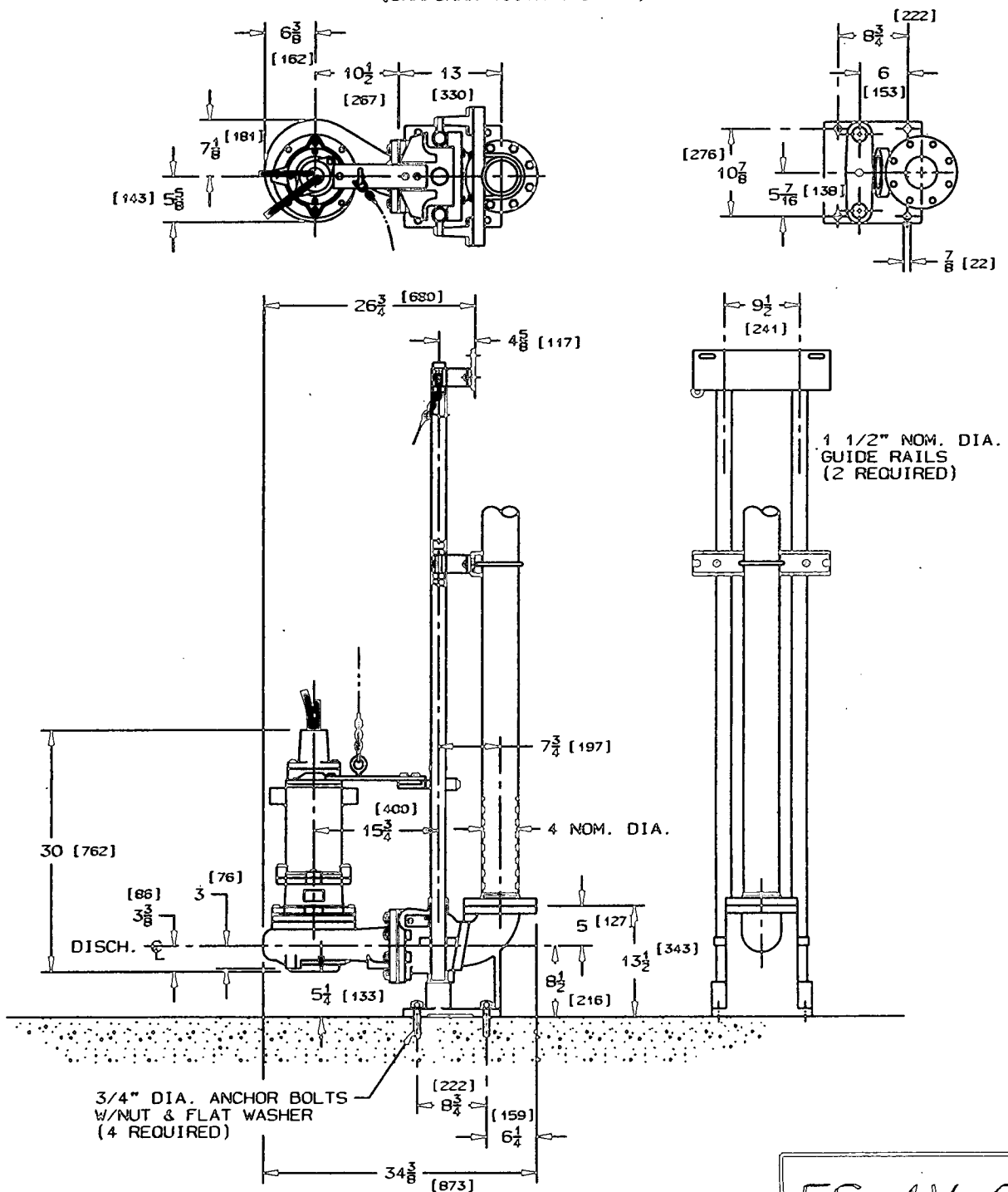
# Myers®

## 4V and 4VX

4" SUBMERSIBLE NON-CLOG WASTEWATER PUMP  
STANDARD (4V) AND EXPLOSION PROOF (4VX)

NOTE:  
METRIC DIMENSIONS  
IN [ ]

SLIDE RAIL DIMENSIONS  
(SRA/SRAX-400VR-1 SHOWN)



ES-4V-CV

# Mercury Control Level Switch

AN ADJUSTABLE STABILIZATION WEIGHT IS FASTENED TO THE CABLE BY MEANS OF A NYLON 66 STRAIN RELIEF CONNECTOR AND BUSHING.

UL AND CSA APPROVED CONSTANT SERVICE CORD APPROVED FOR WET WELL APPLICATIONS (16/2)

A FUNNEL MOUTH CABLE ENTRY ON THE BOTTOM OF THE WEIGHT ALLOWS LONG RADIUS BENDING OF THE CABLE TO VIRTUALLY ELIMINATE WIRE FLEXING FATIGUE.

INTERNAL STABILIZATION WEIGHT KEEPS THE SWITCH BOUNCE TO A MINIMUM IN TURBULENT WET WELLS. THIS WILL REDUCE CONTACT CHATTER AND EXTEND SWITCH LIFE.

DENSE POLYURETHANE FOAM FLOAT MOLDED UNDER PRESSURE, INSURES TOTAL PENETRATION AND WATERPROOF ENCAPSULATION.

THE MERCURY SWITCH IS CUSTOM MADE FOR LEVEL SWITCH APPLICATIONS. THE CONTACTS AND MERCURY SLUG ARE DESIGNED TO WITHSTAND CONTACTOR IN-RUSH CURRENT WITHOUT BURNING OR BOUNCE. (SWITCH RATED AT 2 A CONTINUOUS 115/230 V)

THE INTERNAL WEIGHT ALLOWS FOR A LONGER RADIUS BEND WHICH EXTENDS CORD LIFE AND ALLOWS FOR A MORE POSITIVE SWITCHING EVEN WHEN FLOATING DEBRIS IS IN THE BASIN.

AVAILABLE IN NORMALLY OPEN OR NORMALLY CLOSED.

## S P E C I F I C A T I O N S

**EXTERNAL WEIGHT** -- EXTERNAL WEIGHT IS ADJUSTABLE, CAST IRON, PAINTED AND FASTENED TO CABLE BY MEANS OF NYLON 66 STRAIN RELIEF CONNECTOR AND BUSHING. THE WEIGHT HAS A FUNNEL MOUTH CABLE ENTRY ON THE BOTTOM WHICH ALLOWS FOR A LONG RADIUS BENDING OF THE CORD THAT VIRTUALLY ELIMINATES WIRE FLEXING FATIGUE. THE WEIGHT IS APPROX. 28 OZ. (2 1/4" X 1 1/5").

SWITCHING EVEN WHEN FLOATING DEBRIS IS IN THE BASIN.

**CORD** -- THE CORD IS 16/2 SJOWW (CPE) UL AND CSA APPROVED FOR WET WELL APPLICATION, CONSTANT SERVICE, 300 VOLT, BLACK AND LENGTH REQUIRED.

**SWITCH** -- MERCURY SWITCH IS CUSTOM MADE FOR LEVEL CONTROL SWITCH APPLICATIONS. THE CONTACTS AND MERCURY SLUG ARE DESIGNED TO WITHSTAND CONTACTOR INRUSH CURRENT WITHOUT BURNING OR BOUNCE. THE SWITCH IS FILLED WITH HIGH GRADE MERCURY, FILLED WITH INERT GAS AND HERMETICALLY SEALED. THE PROPER AMOUNT OF MERCURY IS CAREFULLY CONTROLLED TO INSURE MAXIMUM CONTACT RATING WITHOUT

SACRIFICING ENDURANCE FROM PHYSICAL SHOCK. THE MERCURY AND CONTACTS ARE CONTAINED IN A HIGH QUALITY GLASS ENVELOPE WHICH INSURES THAT NO WETTING OF THE SWITCH WALLS WILL OCCUR (WETTING IS WHEN MERCURY ADHERES TO THE WALL OF THE SWITCH ENVELOPE ALLOWING SMALL AMOUNTS OF CURRENT TO BE CONDUCTED, COMMON IN STEEL TYPE SWITCHES). 2 AMP RATING CONTINUOUS 115/230 VOLT.

**INTERNAL WEIGHT** -- INTERNAL STABILIZATION WEIGHT KEEPS SWITCH BOUNCE TO A MINIMUM IN TURBULENT, WET WELLS, THIS CAN REDUCE CONTACT CHATTER AND EXTEND THE PUMP AND SWITCH LIFE. THE INTERNAL WEIGHT ALLOWS FOR A LONG RADIUS BEND WHICH EXTENDS CORD LIFE AND ALLOWS FOR A MORE POSITIVE

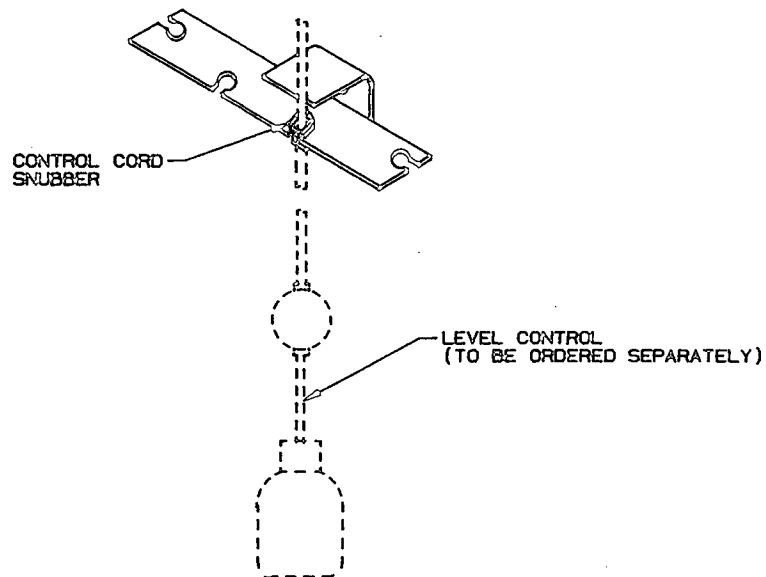
**FLOAT** -- THE FLOAT IS A DENSE, SOLID POLYURETHANE MATERIAL MOLDED UNDER PRESSURE WHICH INSURES A TOTAL PENETRATION AND WATERPROOF ENCAPSULATION. THE COLOR IS ORANGE AND THE TOTAL DISPLACEMENT IS 15 OZ. APPROX. 3" X 5" PEAR SHAPED.



**Myers**

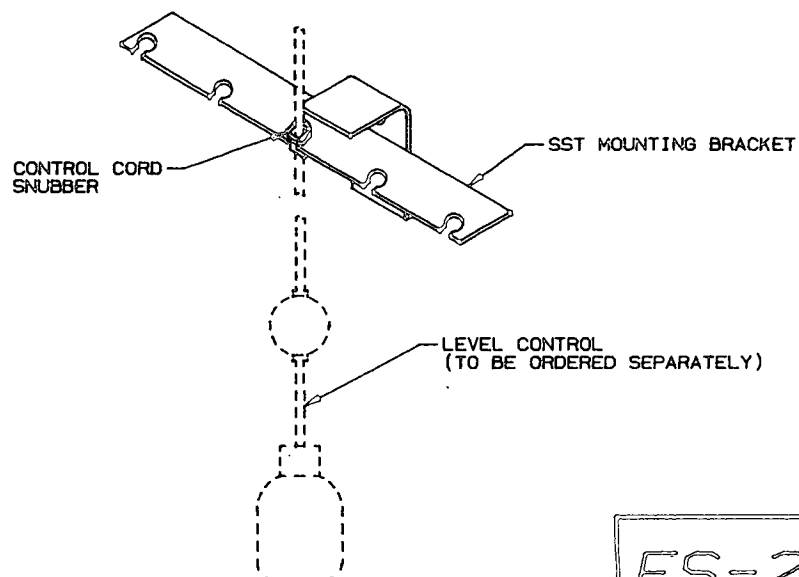
## CSB4-SS

FLOAT BRACKET FOR MOUNTING UP  
TO (4) FOUR CONTROLS



## CSB5-SS

FLOAT BRACKET FOR MOUNTING UP  
TO (5) FIVE CONTROLS



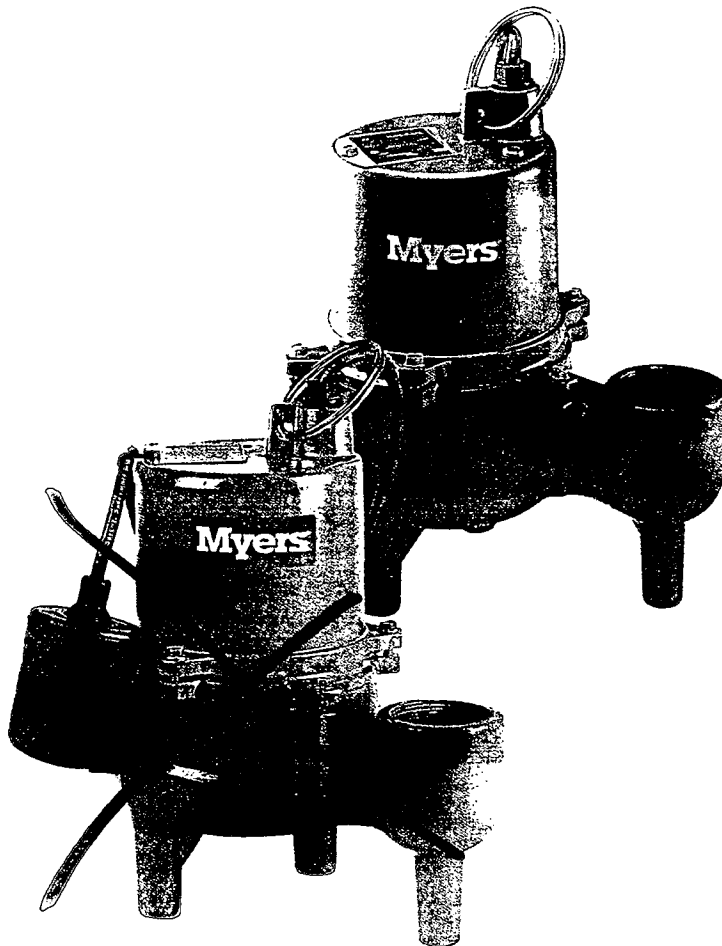
ES-2365A

## Flow Equalization Pump Product Information & Specifications

# SRM4

4/10 Horsepower  
Residential Sewage Pump

*Flow E.Q.*



**T**HE SRM4 MINI NON-CLOG PUMP IS THE MOST RELIABLE 4/10 HORSEPOWER RESIDENTIAL SEWAGE PUMP AVAILABLE TODAY. The SRM4 is a plumbers/contractors dream ... it will not clog! Its recessed impeller design allows 2" solids to pass freely through the volute without the chance of jamming the impeller. The SRM4 series pump has a national field-proven record of reliability. Look to your Myers distributor for the answer to your residential sewage handling needs ... and across the counter will be the Myers mini non-clog, the SRM4. It works for you! For more information, call your Myers distributor today, or the Myers Ashland, Ohio sales office at 419/289-1144.

## ADVANTAGES BY DESIGN

**DURABLE MOTOR WILL DELIVER MANY YEARS OF RELIABLE SERVICE.**

- Oil-filled motor for maximum heat dissipation and continuous bearing lubrication.
- Overload protected shaded pole motor eliminates starting switches.
- Recessed vortex impeller provides minimal radial loading for long bearing life.

**THE SRM4P IS ENGINEERED FOR MANY YEARS OF MAINTENANCE-FREE OPERATION.**

- Wide-angle piggy-back float switch for maximum draw down. (Automatic models)
- Pump can be operated manually by unplugging piggy-back switch and plugging pump directly into outlet (Automatic models).
- Recessed vortex impeller operates completely out of volute and provides free flow through passage for solids and liquids.

## PRODUCT CAPABILITIES

Capacities To	95 gpm	360 lmp
Heads To	18 ft. 19 ft. shutoff	5.5 m 5.8 m
Pump Down Range Float Switch	7 to 14 in.	178 to 356 mm
Solids Handling Capacity	2 in.	50.8 mm
Liquids Handling	raw sewage, effluent, drain water	
Intermittent Liquid Temp.	up to 140°F	up to 60°C
Motor	4/10 HP shaded pole 1550 RPM	
Electrical	115V, 12A or 230V, 6A. 1Ø, 60 Hz.	
Acceptable pH Range	5 - 9	
Discharge, NPT	2 in.	50.8 mm
Minimum Sump Diameter Simplex Duplex	18 in. 30 in.	457 mm 762 mm

## Construction Materials

Motor Housing	cast iron, Class 30, ASTM A48
Volute Case	cast iron, Class 30, ASTM A48
Impeller	recessed, thermoplastic
Power Cord	20 ft. 16/3 SJTW/SJTW-A
Mechanical Seal	carbon and ceramic

WHERE INNOVATION MEETS TRADITION

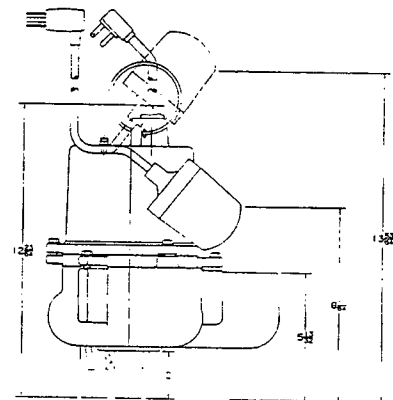
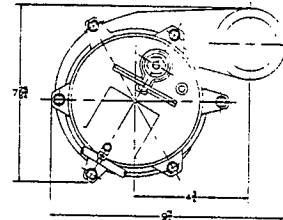
**Myers**

AEC 01613

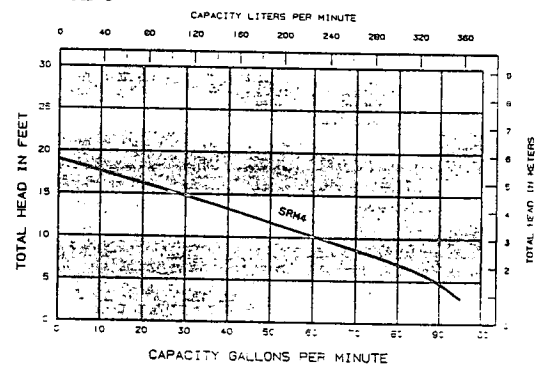
# SRM4

4/10 Horsepower  
Residential Sewage Pump

## DIMENSIONS



## PERFORMANCE CURVE



### MECHANICAL FLOAT SWITCH

Mercury-free, 90° angle operation. (Piggyback models only).

### 4/10 HP MOTOR

Pressed in place and Oil-filled for best alignment and heat transfer. Built-in overload protection.

### POWER CORD

Quick-disconnect watertight fitting.

### MOTOR HOUSING

Heavy cast iron for efficient heat transfer.

### DUAL THRUST WASHERS, SLEEVE BEARINGS

Oil lubricated. Enhance smooth operation and extend pump life.

### CAST IRON VOLUTE

Passes 2" diameter solids.

### MECHANICAL SHAFT SEAL

Carbon and ceramic faces, body is stationary, prevents string or trash from winding on seal.

### RECESSED IMPELLER

Operates out of volute passage, allowing maximum flow of liquids and solids.

K3305 4/94  
Printed in U.S.A.



# Myers®

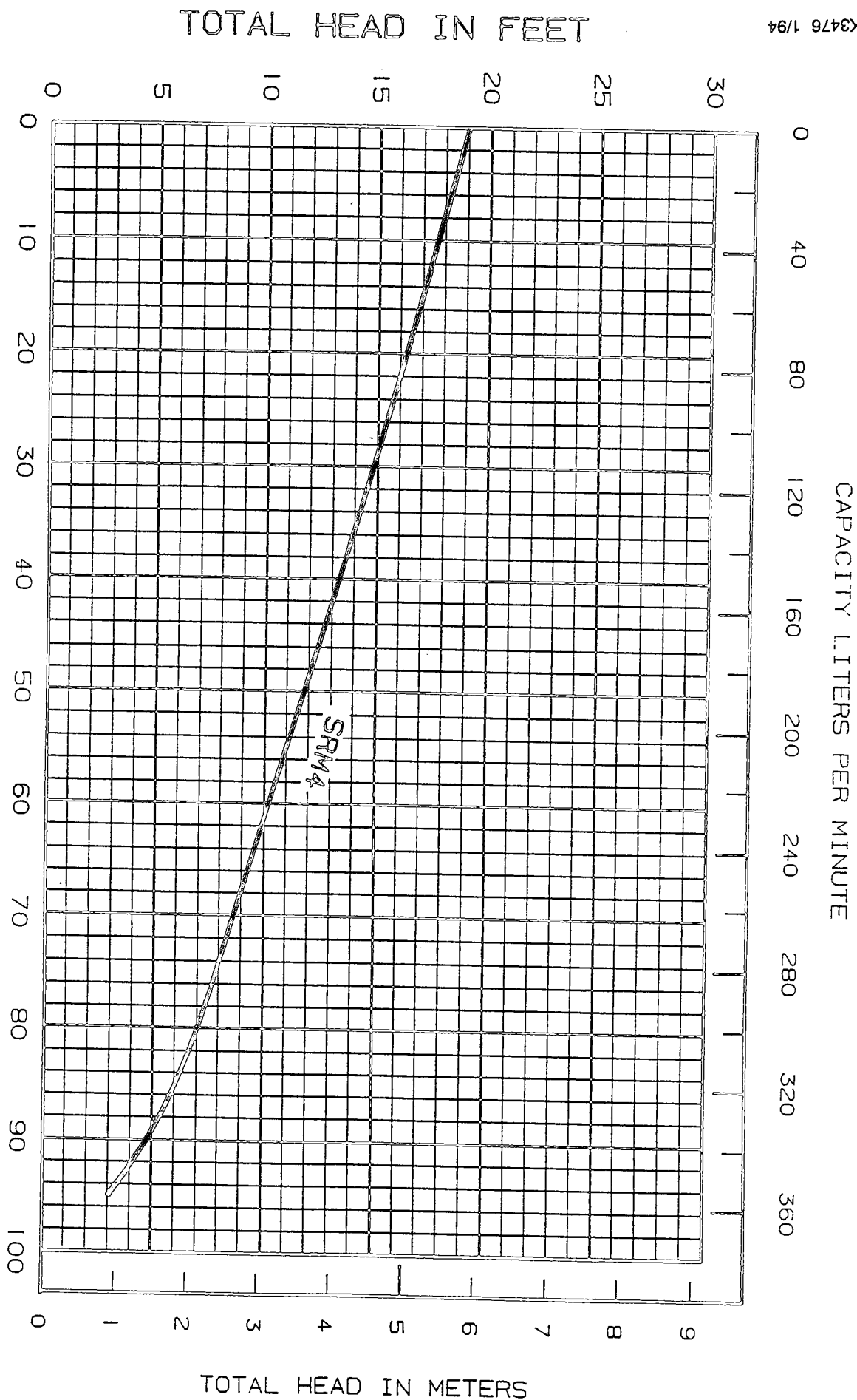
F. E. Myers  
1101 Myers Parkway  
Ashland, Ohio 44805-1969

419/289-1144  
FAX: 419/289-6658, TLX: 98-7443

AEC 01614

USDA/WHOI FEB 11 JAWB

CAPACITY GALLONS PER MINUTE

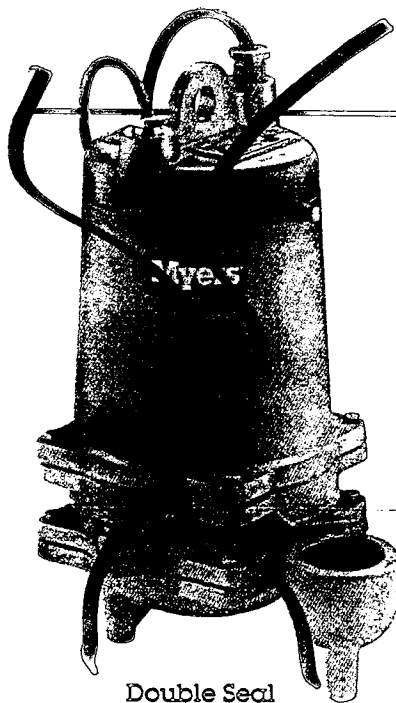


## Dosing Pump Product Information & Specifications

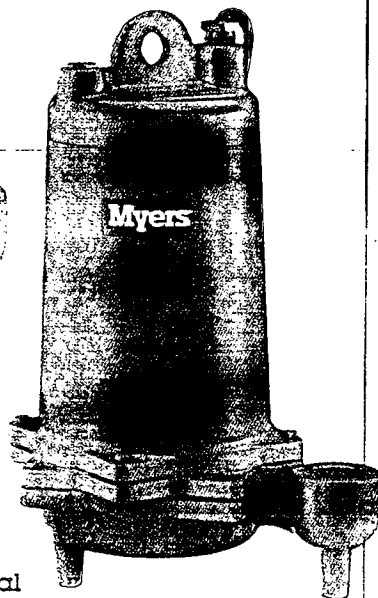
# ME SERIES

1/3 through 1-1/2 HP  
Effluent Pumps

*Dosing*



Double Seal



Single Seal

**THE MYERS ME SERIES EFFLUENT PUMPS ARE DESIGNED SPECIFICALLY FOR TODAY'S EFFLUENT PRESSURE DISTRIBUTION MOUNDS, TRENCHES AND HIGH FLOW DRAINAGE APPLICATIONS.** The ME Series effluent pumps with their efficient two vane, enclosed impellers, provide the ideal performance for optimum dosing. ME Series pumps are constructed of only corrosion resistant materials like cast iron, stainless steel and thermoplastics to assure that they will perform for years to come in the harsh effluent environment and drainage applications. For more information, call your Myers distributor today or the Myers Ashland, Ohio sales office at 419/289-1144.

## ADVANTAGES BY DESIGN

### IDEAL FOR USE IN MOUND AND TRENCH PRESSURE DISTRIBUTION SYSTEMS

- High efficiency, two vane, enclosed impeller provides ideal performance for most efficient dosing.
- Impeller passes full 3/4 inch solids.
- Enclosed impeller design eliminates possibility of jamming or corrosion between impeller and volute.

### DURABLE MOTOR WILL DELIVER MANY YEARS OF RELIABLE SERVICE

- Oil-filled motor for maximum heat dissipation and constant bearing lubrication.
- High torque, permanent split capacitor (PSC), single phase motors. No starting switches or relays to wear out.
- Optional seal leak probe warns of seal leak condition. (Dual seal motors only.) Helps prevent costly motor damage.
- Motors have on winding current and temperature sensitive overload. (Single phase only.)

### THE ME SERIES EFFLUENT PUMPS ARE DESIGNED FOR YEARS OF MAINTENANCE FREE OPERATION

- Volute seal ring is replaceable. Restores pump to original performance if wear should occur.
- Motor is held in place by 4 screws. Easily removed if service is ever needed.

## PRODUCT CAPABILITIES

Capacities To	120 GPM	454 LPM
Heads To	95 ft.	28.9 m
Max. Spherical Solids	3/4 in.	19 mm
Liquids Handling	domestic effluent & drain water	
Intermittent Liquid Temp.	up to 140° F	up to 60° C
Motor Electrical Data	1/3 & 1/2 HP, 115 volts, 1 ph 1/3 to 1-1/2 HP, 230 volts, 1 ph 208, 230, 460, 575 volts, 3 ph oil-filled, permanent split capacitor type, 1 ph, 3450 rpm, 60 Hz	
Motor Insulation	Class B (130°C)	
Third Party Approvals	Pending	
Acceptable pH Range	6-9	
Specific Gravity	.9-1.1	
Viscosity	28-35 SSU	
Discharge, NPT	2 in.	50.8 mm
Min. Sump Dia. Simplex	24 in.	61 cm
Duplex	36 in.	91.4 cm

Construction Materials	
Motor Housing, Volute	cast iron, Class 30, ASTM A48-76
Enclosed Two Vane Impeller Standard	engineered thermoplastic
Optional	bronze
Impeller Wear Ring	304 SST
Volute Sealing Ring	Buna-N
Shaft	416 SST
Power Cord	20 ft. 16/3 SJOW/SJOW-A 20 ft. 14/3 SJOW/SJOW-A 20 ft. 14/4 SOW/SOW-A
1/3 & 1/2 HP, 1 Ph	
3/4 - 1-1/2 HP, 1 Ph	
All 3 Ph	
Shaft Seals Standard	single carbon & ceramic
Optional	tandem carbon & ceramic
Opt. Lower	tungsten carbide
Fasteners	300 Series SST

WHERE INNOVATION MEETS TRADITION

**Myers®**

AEC 01617

# ME SERIES

1/3 through 1-1/2 HP  
Effluent Pumps

## POWER CORD

Jacket sealed with compression fittings. Individual wires potted with epoxy to prevent wicking in case of cord damage.

## MOTOR HOUSING

Cast iron for efficient heat transfer and corrosion resistance.

## BEARINGS

Upper sleeve and lower ball (1/3 and 1/2 HP), upper and lower ball (3/4 - 1-1/2 HP) support rotor. Take radial and thrust loads.

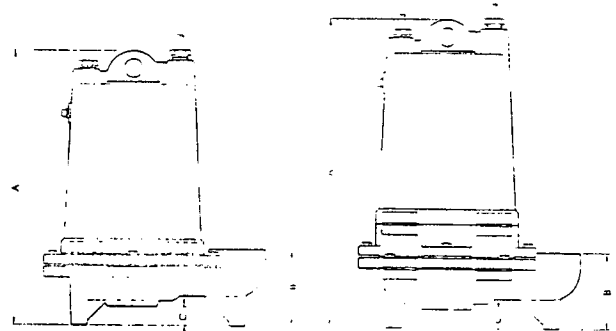
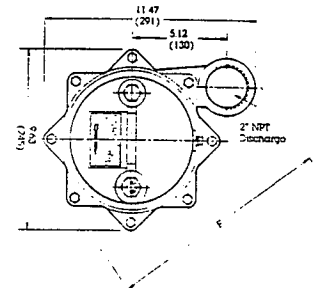
## MOTOR

1/3, 1/2, 3/4, 1 and 1-1/2 HP single or three phase, 60 Hz, 3450 RPM. Single phase PSC motors have built-in on winding overload protection, oil-cooled and lubricated.

## HIGH EFFICIENCY CAST IRON VOLUTE

Corrosion resistant. Passes 3/4" spherical solids. 2" NPT discharge.

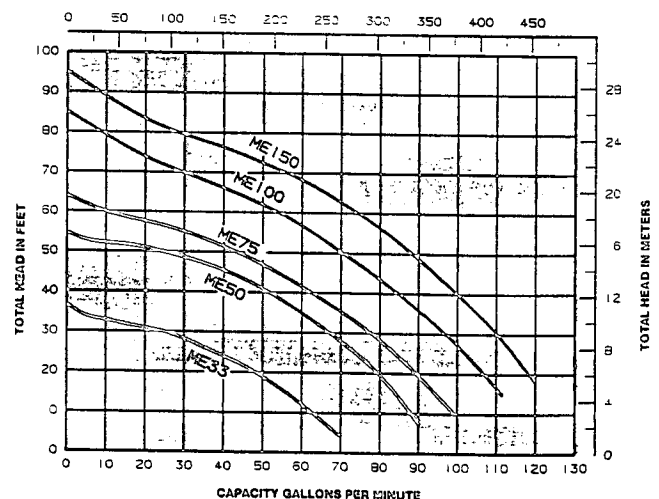
## DIMENSIONS



Model Series	inches (millimeters)			
	A	B	C	F
ME33S & ME50S	14.7 (373)	4.09 (104)	1.03 (26)	12.13 (308)
ME33D & ME50D	16.5 (419)	4.09 (104)	1.03 (26)	12.13 (308)
ME75S, ME100S, ME150S	16.8 (427)	4.0 (102)	1.06 (27)	12.5 (318)
ME75D, ME100D, ME150D	18.6 (472)	4.0 (102)	1.06 (27)	12.5 (318)

## PERFORMANCE CURVE

PUMP PERFORMANCE CURVE  
CAPACITY LITERS PER MINUTE

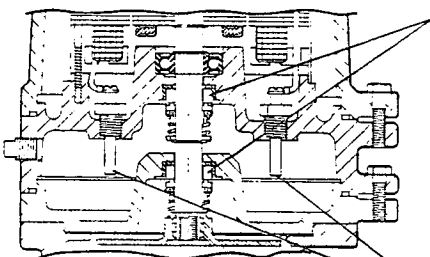


## ENCLOSED TWO VANE IMPELLER

High efficiency. Passes 3/4" spherical solids with stainless steel wear ring. Optional bronze construction available.

## VOLUTE/IMPELLER SEAL RING

Maintains high efficiency and reduces recirculation. Replaceable.



## SHAFT SEAL(S)

Carbon and ceramic faces. Optional dual tandem seals. Extends motor life.

## SEAL LEAK PROBES

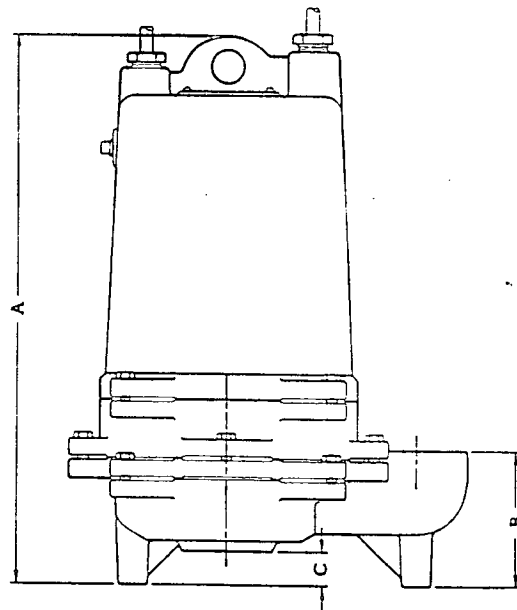
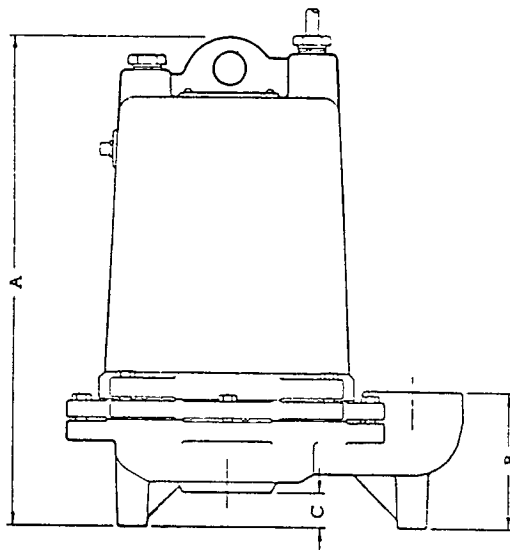
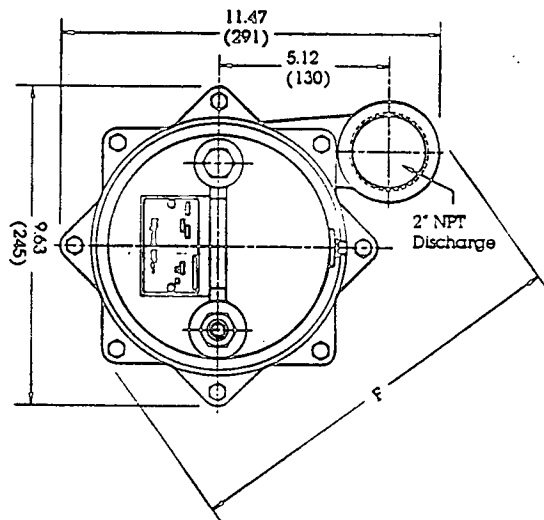
Optional probes (dual seal only) detect water leakage in seal housing. Activates warning light.



# ME Series 1/3 through 1-1/2 HP Effluent Pumps

**Myers®**

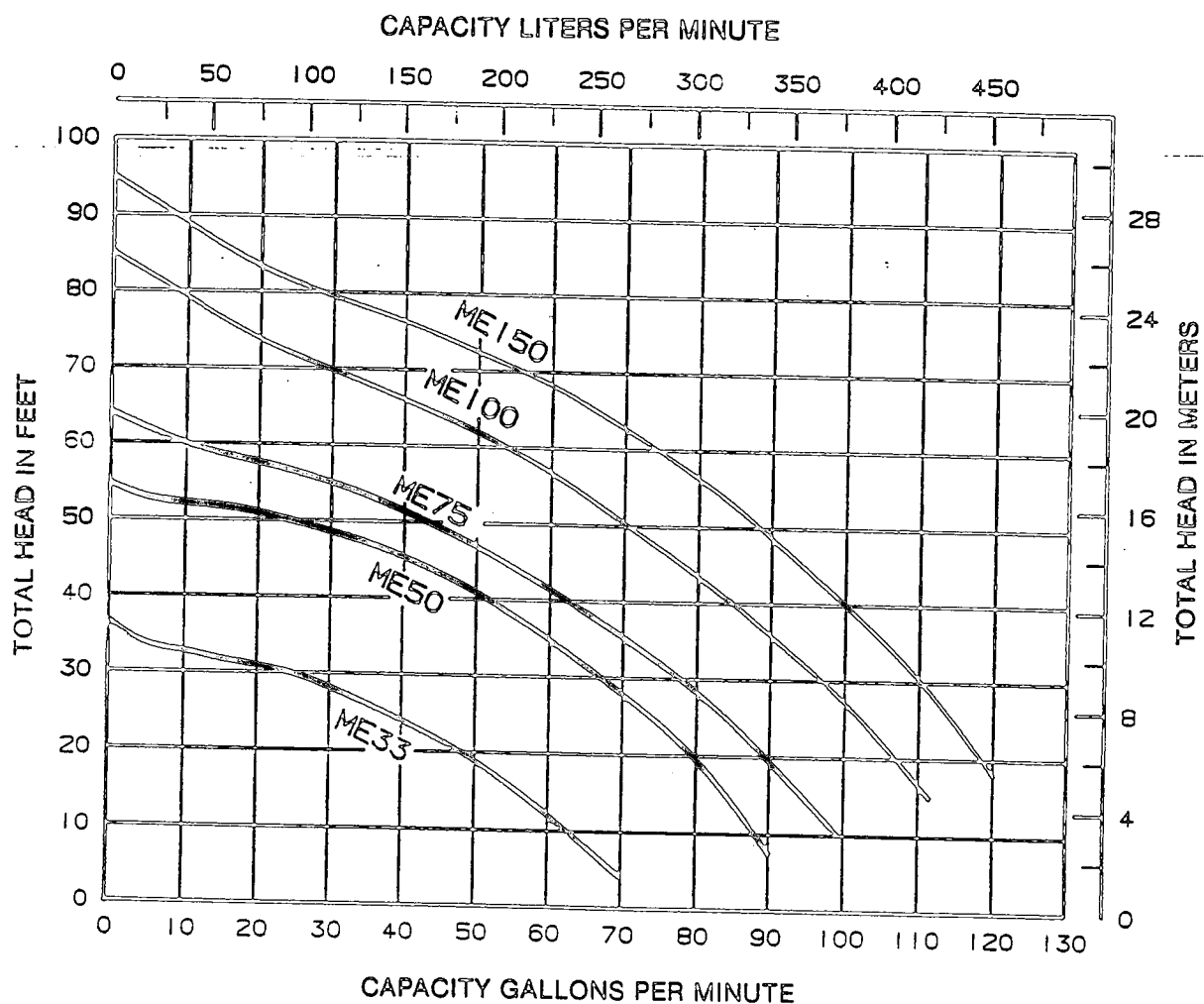
Model Series	Inches (millimeters)			
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ME75S, ME100S, ME150S	16.8 (427)	4.0 (102)	1.06 (27)	12.5 (318)
ME75D, ME100D, ME150D	18.6 (472)	4.0 (102)	1.06 (27)	12.5 (318)



F. E. Myers, 1101 Myers Parkway, Ashland, Ohio 44805-1969  
419/289-1144 • FAX: 419/289-6658 • TLX: 98-7443

# ME Series 1/3 through 1-1/2 HP Effluent Pumps Performance Curve

**Myers®**



**Myers®**

1101 Myers Parkway, Ashland, Ohio 44805-1923  
419/289-1144 FAX 419/289-6658 Telex 98-7443

October 1, 2001

Ms. Abbot Stevenson  
OhioEPA - Southeast District Office  
2195 Front Street  
Logan, Ohio 43138

RE: American Energy Corp. - Century Mine  
PTI #06-6555

Dear Ms. Stevenson:

The following revisions and clarifications are submitted in response to your letter dated September 18, 2001. The numbered items below correspond to the items from the original letter.

1. The effluent concentrations and loads in the table on page B3-1 of the PTI have been revised as requested. The revised page has been inserted into the attached copy of Form B3.
2. As requested, American Energy Corporation is going to proceed with anti-degradation permitting in order to obtain a permit to discharge the treated effluent directly to Piney Creek instead of pumping into Pond 011. We have been given authorization to proceed with the work.
3. The anti-siphon valves and bypass connections at both pump stations have been moved outside of the wet wells and into separate valve pits. Drawings C2, PC-2 and PC-3 have been revised to show the proposed valve pits. Copies of the drawings are included in the attached sets.
4. The pump station control panels will be NEMA 3R or 4X enclosures. Notes have been added to drawings PC-2 and PC-3.
5. A statement has been added to paragraph 15 on page B3-3 for the disposal of sludge at a public wastewater treatment plant. The revised page is included in the attached copy of Form B3.
6. Pump station "B" has been designed with pumps capable of pumping up to 185 gallons per minute at a total dynamic head of 30 feet. The pumps were sized based on the potential discharge from the sand filters and possible storm water that could percolate through the filters during heavy storm events. The sand filters will receive a dose of approximately 780 gallons in 10 minutes. The larger effluent pump sizes were selected in an effort to eliminate any discharge problems in this portion of the treatment system.
7. The transfer of the permit is currently being processed by the Ohio Department of Natural Resources. We are awaiting this transfer to be finalized before proceeding with the NPDES

transfer paperwork. As soon as the transfer is complete, we will send the required transfer forms to you. If you have any questions, please contact Ellen Greer at our office.

8. This area is currently being reviewed by American Energy Corporation. They do not intend to create another point source discharge in this area, and are currently examining a storage pond and pumping system. We will forward any data that becomes available as soon as possible.

Please contact me if you have any questions or need any additional information.

Sincerely,

Jack A. Hamilton & Associates, Inc.

  
Ray L. Luyster

Attachments: 1 Set of PTI Forms A, B1 (Pump A), B1 (Pump B), Revised Form B3  
3 Sets of Project Plans w/revisions  
2 Sets of Specifications

CC: Mr. Ryan Desko

October 18, 2001

Ms. Abbot Stevenson  
OhioEPA - Southeast District Office  
2195 Front Street  
Logan, Ohio 43138

RE: American Energy Corp. - Century Mine  
PTI #06-6555

Dear Ms. Stevenson:

Per our phone conversation, I have revised the wet wells and valve pits for the two pump stations. Drawings PC-6 and PC-7 show the revised wet well and valve pit plans and elevations for Pump Station A and Pump Station B. The cover sheet has been revised to include sheets PC-6 and 7, and the previous wet well details have been removed from sheets PC-2 and PC-3. All of the revised sheets are enclosed for your review.

Please contact me if you have any questions or need any additional information.

Sincerely,

Jack A. Hamilton & Associates, Inc.

*Ray L. Luyster*  
Ray L. Luyster

Attachments: 3 Sets - Sheets CS, PC-2, PC-3, PC-6 & PC-7

CC: Mr. Ryan Desko

Report on the Permit to Install Application and Detailed Plans for  
Two Pump Stations and an Extended Aeration Package Plant to serve the  
Bath Houses at the New Century Mine  
Wayne Township, Belmont County  
PTI No. 06-6555  
November 9, 2001

On March 11, 2001, an application for Permit to Install was received in the Southeast District Office. The submittal included four (4) sets of detailed drawings, two (2) copies of the application for Permit to Install (PTI) Forms 1, B1, and B3, and specifications. Revisions were received on October 2, 26, and November 5, 2001.

Consultant/Representative of Owner:

Jack A. Hamilton and Associates, Inc.  
342 High Street, P.O. Box 471  
Flushing, Ohio 43977  
Don Brafford, P.E. (740) 968-4947

Owner:

American Energy Corp.  
43521 Mayhugh Road  
Bealsville, Ohio 43716  
Eric Grim, Operations Supt. (740) 926-9152

Location Description:

The Century Mine is located in Section 3 of Wayne Township west of State Route 145.

General/Background Information:

This underground mine is the former Allison Mine. It has not been in operation for over ten years and is being reopened by a new company, the American Energy Corporation. It was previously owned by Y&O Coal Company, then Wyoming Pocahontas Coal Company, then Bennoc Coal Company. The Allison Mine has an expired NPDES permit, OIL00091, for which an application for renewal was submitted prior to expiration. The mine proposes to construct 2 bath houses for the employees. The wastewater treatment plant will be located near office/bath house building. The plant discharge will be to an existing pond which is outfall 011. The water in the pond at outfall 011 will be used for dust control in the mine and will not discharge; therefore, antidegradation regulation does not apply. The NPDES permit is being renewed at this time. Outfall 01 will not be eliminated so as to prevent future antidegradation issues for mine pollutants. However, the permit will limit discharge from this outfall to non-sanitary mine waste. The company intends to submit an antidegradation application so that they can discharge sanitary and mine runoff wastewater from the pond at outfall 011 in the future.

Pump station A is proposed to pump the effluent from the new smaller bath house at the prep plant to the treatment plant. Sanitary sewage from the office/main bath house will flow by gravity to the treatment plant. Pump station B will pump the effluent from the treatment plant to the pond at outfall 011.

Pump Station Design:

	Pump Station "A"
Type of Pump Station .....	Pre-cast concrete
Electrical Enclosure .....	Nema 4X
Rails with Lift Chains .....	Yes
Number of Pumps .....	2

Type of Pumps .....	submersible grinder
Capable of Passing 3" Dia. Spheres .....	NA
Pump Rate, Each .....	29 gpm (41,760 gpd) at 38 TDH
Average Daily Flow .....	1400 GPD (1.0 gpm)
Peak Daily Flow .....	266,440 GPD (185 gpm)
Wet Well Effective Capacity .....	94 gal.
Detention Time .....	3.2 min.
Automatic Pump Alternator .....	Yes
Alarm .....	Audio/visual
Provisions for Stand-by Power	
or emergency pumping .....	Dual feed
Ventilation .....	Yes
Gasketed Flexible Watertight	
Connections .....	Yes
Pump Lifting Hoist .....	No
Security .....	Locks on hatch
Flow Metering .....	Run time meters
Float Switch Level Elevation from bottom to top:	
Pump Stop .....	1133.25 ft.
Pump One On .....	1134.25 ft.
Alarm .....	1135.75 ft.
Pump Two On .....	1136.00 ft.
Influent Elevation .....	1136.50 ft.
Bottom of Wet Well .....	1132.50 ft.
Explosion Proof Pumps Required .....	No
Distance to Nearest Dwelling .....	NA
Subject to Flooding .....	No

#### **Valve Pit:**

#### **Pump Station "A"**

Drain with Check Valve .....	Yes
Check Valve, each pump outlet, horizontal .....	Yes
Gate Valve, each pump outlet, horizontal .....	Yes
Common Force Main Gate Valve .....	Yes
Common Force Main Bypass Pump Connection .....	Yes
Vault Drain Seal .....	No
Vault Drain Check Valve .....	Yes
Security .....	Locked hatch

#### **Force Main:**

Diameter .....	2 inch
Length .....	2890 ft.
Material Specifications .....	ASTM-2241
Joint Specifications .....	ASTM F-477
Bedding and Backfill .....	ODOT 603.04 Class C
Depth .....	4 ft.

#### **Building Sewer:**

Sewer Type .....	PVC, ASTM D-3034 (SDR 21)
Length .....	290 ft.
Diameter .....	8 in.
Min. Grade .....	0.4 %
Manhole spacing .....	130 ft. max.
Adequate Isolation from water supply? .....	Yes

Design Criteria:

Design BOD Loading .....	15.8 lbs BOD <sub>5</sub> /day
Basis for Design BOD Loading .....	0.17 lbs/100 gal.
Design Flow (ADDF) .....	9,275 gpd
Basis for Design Flow .....	265 miners at 35 gpd
Runoff Period .....	8 hrs.
Peak Inflow Rate .....	9,275 gpd, (6.4 gpm)
Equalized Flow Rate .....	9,275 gpd (6.4 gpm)

Trash Trap:

Effective Tank Capacity .....	1617 gal.
Outlet T Length .....	Between 30 and 50% of Liquid Depth
Access Risers? .....	Yes

Equalization Basin:

Effective Capacity .....	4830 gal.
Overflow to Aeration? .....	Yes

Pumps:

Number .....	2
Type .....	submersible grinder
Make .....	Myers
Model .....	SRM4
Rating (hp) .....	0.4
Rating, ea. ....	10 gpm at 15 ft. TDH
Alternating? .....	Yes

Pump Controls:

Type .....	mercury level floats
Off Elev. ....	934.25 ft.
Lead On Elev. ....	936.25 ft.
Lag On Elev. ....	938.25 ft.
Alarm .....	940.25 ft.

Aeration Independent Supply? .....	Yes
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Blowers:

Number .....	1
Rating, ea. ....	25 cfm at 4.5 psi
Air supplied .....	25 cfm (4 cfm/1000 gal = 19.3 cfm)

Sloped Floor? .....	Yes
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Extended Aeration Plant:

Aeration Basin:

Manufacturer .....	United Precast
Aeration Volume .....	10,109 gal.
Number of Basins .....	2
Detention Time at ADDF .....	24 hrs.

Blowers:

Number .....	2 total (1 as backup)
Make .....	Roots
Model .....	VRA1-33
Rating, ea. ....	75 cfm at 4.5 psi, each
Air supplied .....	10 cfm/1000 gal (2600 cf air/lb BOD)

Clarifiers:

Number/Type .....	1
Tank Volume, ea. ....	2760 gal.



Detention Time at ADDF .....	7.2 hrs.
Proper Baffling? .....	Yes
Surface area .....	50 s.f.
Surface Settling Rate:	
@ DAF .....	185 gpd/ft <sup>2</sup>
@ Peak Eq. Flow .....	185 gpd/ft <sup>2</sup> (equalized)
Weir Overflow Rate:	
@ DAF .....	371 gpd/lf
@ Peak Eq. Flow .....	371 gpd/lf
Adjustable Weir? .....	Yes
Coned Hopper? .....	Yes
Sludge Return Type .....	Air Lift
Pipe Dia. ....	2 in.
Skimming Device .....	Air lift

#### **Sludge Handling:**

Type .....	Aerated storage tank
Tank Capacity .....	2151 gal. (min req = $0.2 \times 9275 = 1855$ )
Supernatant Control .....	Decant to aeration tank
Adjustable? .....	Yes
Air Supply .....	9 cfm
Number of Sludge Drying Beds .....	N/A
Total Area .....	N/A

#### **Dosing Tank:**

Tank Capacity .....	780 gal.
Dosing pumps .....	78 gpm at 15 TDH

#### **Slow Sand Filters:**

Number .....	2
Total Area .....	833 s.f. (2 at 417 s.f.)
Loading rate .....	11 gpm/sf
Distribution Adequate? .....	Yes
Splash Pads? .....	Yes
Sand Depth .....	18 in.
Wall Construction .....	Cast in place reinforced concrete
Underdrain Pipe Spec. ....	PVC sch 40 or SDR 35

#### **Chlorine Contact Tank:**

Tank Volume .....	1170 gal.
Detention Time:	
@ ADDF .....	6.4 gpm = 183 min.
Dosage rate .....	8 mg/l
Chlorination Equipment:	
Type .....	Tablet
Manufacturer .....	ELTECH
Model No. ....	100
Dechlorination Equipment:	
Type .....	Tablet, Sodium-bisulfite
Manufacturer .....	ELTECH
Model No. ....	A-200

Flow Measurement:

Effluent pump station run time meters.

Effluent Pump Station Design:

Pump Station "B"

Type of Pump Station	Pre-cast concrete
Electrical Enclosure	Nema 4X
Rails with Lift Chains	Yes
Number of Pumps	2
Type of Pumps	submersible
Capable of Passing 3" Dia. Spheres	Yes
Pump Rate, Each	185 gpm at 30 TDH
Average Daily Flow	9275 GPD (6.5 gpm)
Peak Daily Flow	9275 GPD (6.5 gpm)
Wet Well Effective Capacity	476 gal.
Detention Time	2.6 min.
Automatic Pump Alternator	Yes
Alarm	Audio/visual
Provisions for Stand-by Power	
or emergency pumping	Dual substation
Ventilation	Yes
Gasketed Flexible Watertight Connections	Yes
Pump Lifting Hoist	No
Security	Locks on hatch
Flow Metering	Run time meters
Float Switch Level Elevation from bottom to top:	
Pump Stop	930.75 ft.
Pump One On	933.00 ft.
Alarm	935.75 ft.
Pump Two On	936.25 ft.
Influent Elevation	941.58 ft.
Bottom of Wet Well	929.50 ft.
Explosion Proof Pumps Required	No
Distance to Nearest Dwelling	NA
Subject to Flooding	No

Valve Pit:

Pump Station "B"

Drain with Check Valve	Yes
Check Valve, each pump outlet, horizontal	Yes
Gate Valve, each pump outlet, horizontal	Yes
Common Force Main Gate Valve	Yes
Common Force Main Bypass Pump Connection	Yes
Vault Drain Seal	No
Vault Drain Check Valve	Yes
Security	Locked hatch

Force Main:

Diameter	4 inch
Length	510 ft.
Material Specifications	ASTM-2241 (SDR 21)
Joint Specifications	ASTM F-477
Bedding and Backfill	ODOT 603.04 Class C
Depth	4 ft.

**Discharge Stream:**

Pond at outfall 011, then pumped into mine for dust control. The discharge from pump station "B" will be outfall 601 with monitoring requirements.

**Outfall Location:**

Latitude ..... 39° 53' 42.4"

Longitude ..... 81° 01' 23.8"

**Antidegradation:** No

**Effluent Limits:**

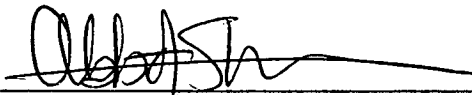
Parameter	30-Day (mg/l)	7-Day (mg/l)
CBOD <sub>5</sub>	10	15
Suspended Solids	12	18
Dissolved Oxygen	Greater than 6.0 at all times	
Ammonia (summer)	1.0	1.5
Ammonia (winter)	3.0	4.5
Chlorine Residual	Not to exceed 0.038 mg/l at all times	
pH	6.5 - 9.0 S.U.	
Fecal Coliform (summer)	1,000 (#/100ml)	2,000 (#/100ml)

**Estimated Cost:**

\$146,000.00

**Conclusion:**

The detailed plans for the installation of two pump stations and an extended aeration package plant to serve the bath houses and office at the new Century Mine have been reviewed, appear to be satisfactory and are recommended for approval.



Abbot Stevenson  
Environmental Engineer  
Division of Surface Water



Bruce E. Goff, P.E.  
Group Leader, Permit Section  
Division of Surface Water



State of Ohio Environmental Protection Agency

NOV 24 2001

STREET ADDRESS:

azarus Government Center  
122 S. Front Street  
Columbus, OH 43215-1099

TELE: (614) 644-3020 FAX: (614) 644-2329

MAILING ADDRESS:

P.O. Box 1049  
Columbus, OH 43216-1049

November 21, 2001

Re: Wayne Township  
Belmont County  
Application No. 06-6555  
Application for Pump Stations and Extended Aeration  
Sewage Treatment Plant for the Century Mine  
Plans Received May 14, 2001  
Revised Plans Received November 5, 2001  
From Jack A. Hamilton and Associates, Inc.

CERTIFIED MAIL

American Energy Corporation  
Attn: Eric Grimm  
43521 Mayhugh Hill Road  
Beallsville, Ohio 43716

Ladies and Gentlemen:

Enclosed is the Ohio EPA Permit to Install which will allow you to install the described source in the manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The issuance of this Permit to Install is considered to be a final action of the director. Any person who was a party to this proceeding may appeal this action to the Environmental Review Appeals Commission pursuant to Ohio Revised Code 3745.04. To appeal this action, a written notice of appeal, setting forth the action complained of and the grounds for appeal, must be filed with the Environmental Review Appeals Commission at 236 East Town Street, Room 300, Columbus, Ohio 43266-0557, within thirty (30) days after the date of this letter. You must also serve a copy of the notice of appeal to the director of Ohio EPA and the Environmental Enforcement Section of the Office of the Attorney General within three (3) days of filing a notice of appeal with the Environmental Review Appeals Commission.

You should note that a general condition of your permit states that issuance of the permit does not relieve you of the duty of complying with all applicable federal, state, and local laws, ordinances, and regulations.

If you have any questions, please contact the Ohio EPA district office to which you submitted your application.

Sincerely

Patti L. Smith, Supervisor  
Permit Processing Unit  
Division of Surface Water

PLS/sg

Enclosure

cc: Southeast District Office  
Belmont County Health Department  
Jack A. Hamilton and Associates, Inc.

Bob Taft, Governor  
Maureen O'Connor, Lieutenant Governor  
Christopher Jones, Director

Ohio Environmental Protection Agency

Permit to Install

Application No: 06-6555

Applicant Name: American Energy Corporation  
Address: 43521 Mayhugh Hill Road  
City: Beallsville  
State: Ohio, 43716

Person to Contact: Donald M. Brafford  
Telephone: 740-968-4947

Description of Proposed Source: Pump Stations and Extended Aeration Sewage Treatment Plant for the Century Mine, Wayne Township, Belmont County

Issuance Date: November 21, 2001  
Effective Date: November 21, 2001

The above named entity is hereby granted a permit to install for the above described source pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source of environmental pollutants will operate in compliance with applicable state and federal laws and regulations. Issuance of this permit does not constitute expressed or implied assurance that, if constructed or modified in accordance with those plans and specifications, the above described source of pollutants will be granted the necessary operating permits. This permit is granted subject to the following conditions attached hereto.

Ohio Environmental Protection Agency



Christopher Jones  
Director  
P. O. Box 1049,  
122 South Front Street  
Columbus, OH 43216-1049

This permit shall expire if construction has not been initiated by the applicant within eighteen months of the effective date of this permit. By accepting this permit, the applicant acknowledges that this eighteen month period shall not be considered or construed as extending or having any effect whatsoever on any compliance schedule or deadline set forth in any administrative or court order issued to or binding upon the permit applicant, and the applicant shall abide by such compliance schedules or deadlines to avoid the initiation of additional legal action by the Ohio EPA.

The director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, examining records, or reports pertaining to the construction, modification, or installation of the above described source of environmental pollutants.

Issuance of this permit does not relieve you of the duty of complying with all applicable federal, state, and local laws, ordinances, and regulations.

Any well, well point, pit, or other device installed for the purpose of lowering the ground water level to facilitate construction of this project shall be properly abandoned in accordance with the provisions of this plan or as directed by the director or his representative.

Any person installing any well, well point, pit or other device used for the purpose of removing ground water from an aquifer shall complete and file a Well Log and Drilling Report form with the Ohio Department of Natural Resources, Division of Water, within 30 days of the well completion in accordance with the Ohio Revised code Section 1521.01 and 1521.05. In addition, any such facility that has a capacity to withdraw waters of the state in an amount greater than 100,000 gallons per day from all sources shall be registered by the owner with the chief of the Division of Water, Ohio Department of Natural Resources, within three months after the facility is completed in accordance with Section 1521.16 of the Ohio Revised Code. For copies of the necessary well log, drilling report, or registration forms, please contact:

Ohio Department of Natural Resources  
Fountain Square  
Columbus, OH 43224-1387  
(614) 265-6717

The proposed wastewater disposal system shall be constructed in strict accordance with the plans and application approved by the director of the Ohio Environmental Protection Agency. There shall be no deviation from these plans without the prior express, written approval of the agency. Any deviations from these plans or the above conditions may lead to such sanctions and penalties as provided for under Ohio law. Approval of this plan and issuance of this permit does not constitute an assurance by the Ohio Environmental Protection Agency that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

This permit to install applies only to the wastewater treatment works listed above. The installation of drinking water supplies, air contaminant sources, or solid waste disposal facilities will require the submittal of a separate application to the director.

This permit applies to a wastewater disposal system designed to serve an average daily hydraulic flow of no more than 10,000 gallons.

Roof drains, foundation drains, and other clean water connections to the disposal system are prohibited.

No liquids, sludges, or toxic or hazardous substances other than those set forth in the approved permit shall be accepted for disposal without the prior written approval of the Ohio Environmental Protection Agency.

Sewer and manhole construction joints shall conform to standards of the Ohio Environmental Protection Agency.

When Polyvinyl Chloride or Acrylonitrile Butadiene Styrene pipe is used, it must be tested for maximum deflection of 5 percent under the supervision of a professional engineer at a time when he has determined that the backfill has settled. Pipe with a stiffness of 200 p.s.i. or greater need not be tested for deflection if all pipe between manholes is less than 12 feet below final grade. Results of these tests shall be submitted to the appropriate district office. Any lines which fail the test must be repaired and retested until they meet the requirements.

Filtering material used in filters shall comply with material specified in approved plans and specifications.

Construction of any wastewater treatment works shall be completed and operation of the facility approved by the Ohio Environmental Protection Agency before sewage or other wastewater is generated by the applicant or is discharged to the wastewater disposal system.

The treatment works shall be abandoned and the sanitary sewers connected to the public sanitary sewerage system whenever such system becomes available.

The Southeast District Office of the Ohio Environmental Protection Agency shall be notified in writing as to (a) the construction starting date; (b) the construction completion date; and (c) the date the wastewater disposal system was placed into operation.

The owner, American Energy Corporation, shall be responsible for proper operation and maintenance of the wastewater disposal system.

The owner, American Energy Corporation, shall be responsible for proper operation and maintenance of the sewerage system.

Provisions shall be made for proper operation of the wastewater pumping facilities.

TO BE COMPLETED BY THE APPLICANT FOR A PERMIT  
(PLEASE PRINT OR TYPE)

APPLICANT: AFTER COMPLETING THIS SECTION, FORWARD FORM DIRECTLY TO THE OHIO EPA DISTRICT REVIEWING YOUR PTI APPLICATION. YOU WILL BE NOTIFIED IF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY IS REQUIRED FROM THE PUBLIC UTILITIES COMMISSION OF OHIO (PUCO).

OEPA DISTRICT OFFICE (CHECK ONE): ☐ NW ☐ NE ☐ SW  
☒ SE ☐ CD ☐ CO

OEPA ADDRESS: 2195 Front Street  
CITY, STATE: Logan, Ohio ZIP CODE: 43138  
PHONE: (740) 380-5284 CONTACT PERSON: Ms. Abbot Stevenson

APPLICANT NAME: American Energy Corporation  
ADDRESS: 43521 Mayhugh Hill Road, Beallsville, Ohio 43716  
PHONE: 740-926-9152  
COUNTY AND TOWNSHIP OF PROJECT: Belmont County, Wayne Township  
PROJECT NAME: Century Deep Mine CONTACT PERSON: Mr. Eric Grimm

Give a brief description of the project: The project implies the reopening of the existing deep mine at the site. Two sanitary sewer lift stations and one 10,000 gallon per day treatment will be installed to handle the sewage produced at the site.

Provide the name, telephone number and indicate by type the entity that will own/operate the complete system/project as it pertains to 4905.02-03, Ohio Revised Code (see back of this form ) (Examples of type: Public Utility, Government Entity, Home Owners/Property Owners Assoc., Regional District, Cooperative, Privately Owned, etc.):

Name: American Energy Corporation Telephone No.: (740) 926-9138

Ownership Type: Privately owned

If you (applicant) are to transfer ownership of system/project, indicate date or time of transfer (e.g. within one month of project completion): Date/Time of Transfer: \_\_\_\_\_

If different than the above named owner/operator, provide the name, telephone number, and type of entity that will bill, collect payment, and retain the payment revenue for the service relative to the system/project:

Name: N/A Telephone No.: \_\_\_\_\_

Ownership Type: \_\_\_\_\_

If you (applicant) believe you do not need a Certificate of Public Convenience and Necessity from PUCO please state why: This facility will only service the proposed bathhouses at the mine site. No public sanitary sewage will be treated by this system.

All information shall be contained on this sheet

YOU ARE REQUIRED TO IMMEDIATELY NOTIFY THE PUBLIC UTILITIES COMMISSION OF OHIO OF ANY CHANGES TO THIS INFORMATION

I certify that the above information is true and correct to the best of my knowledge and belief

Eric S. Grimm  
Signature of Applicant

5/10/01  
Date



Section 4905.02, Revised Code, states that, as used in Chapter 4905 of the Revised Code, "public utility" includes every corporation, company, copartnership, person, or association, their lessees, trustees, or receivers, defined in section 4905.03 (see below) of the Revised Code, including all public utilities that operate their utilities not for profit, except the following:

- (A) Electric light companies that operate their utilities not for profit;
- (B) Public utilities, other than telephone companies, that owned and operated exclusively by and solely for the utilities' customers;
- (C) Public utilities that are owned or operated by any municipal corporation;
- (D) Railroads as defined in sections 4907.02 and 4907.03 of the Revised Code.

Section 4905.03(A)(8), Revised Code, states that any person firm, copartnership, voluntary association, joint stock association, company or corporation is a WATER-WORKS COMPANY, when engaged in the business of supplying water through pipes or tubing, or in a similar manner, to consumers within this state.

Section 4905.03(A)(14), Revised Code, states that any person, firm, copartnership, voluntary association, joint stock association, company or corporation is a SEWAGE DISPOSAL SYSTEM COMPANY, when engaged in the business of sewage disposal services through pipes or tubing, and treatment works, or in a similar manner, within this state.

Section 4933.25, Revised Code, state that no water-works company or sewage disposal system company shall construct, install, or operate water distribution facilities or sewage disposal system facilities until it has been issued a certificate of public convenience and necessity by the Public Utilities commission of Ohio.

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**TO BE COMPLETED BY THE OHIO ENVIRONMENTAL PROTECTION AGENCY**

OEPA PERMIT APPLICATION NUMBER: \_\_\_\_\_

DISTRICT STAFF PERSON REVIEWING PROJECT: \_\_\_\_\_

\_\_\_\_\_ Staff believes that this operation **does not** require a certificate of public convenience and necessity.

\_\_\_\_\_ Staff believes that this operation **may or will** require a certificate of public convenience and necessity.

Mail completed form to:

The Public Utilities Commission of Ohio, Compliance Division  
180 East Broad Street  
Columbus, OH 43215-3793  
Contact the PUCO at (614) 466-0518 if you have questions.

\*\*\*\*\*

**TO BE COMPLETED BY THE PUBLIC UTILITIES COMMISSION OF OHIO**

Based on the above information:

\_\_\_\_\_ Staff believes that this operation does not require a certificate of public convenience and necessity.

\_\_\_\_\_ Staff believes that this operation does require a certificate of public convenience and necessity. Applicant needs to be informed of this conclusion.

Please mail to the appropriate office of the Ohio EPA as indicated.

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Signature of Applicant

\_\_\_\_\_  
Date

AMERICAN ENERGY CORPORATION

P. O. Box 5  
Allendale, Ohio 43902

Phone: 740-226-9132  
Fax: 740-226-9139

June 8, 2001

Mr. Ray Luyster  
Jack A. Hamilton & Associates, Inc.  
P. O. Box 471  
342 East High Street  
Flushing, Ohio 43977

Dear Mr. Luyster:

In response to your question on the daily volume of water to be withdrawn from Pond #11, it is timeframe dependent. The bathhouse completion date is projected at October 1, 2001, with a 70% occupancy rate. At that time, we will be operating three miner sections with an estimated draw rate from Pond #11 of 33,000 gal./day. This rate will escalate to 250,000 gal./day in February 1, 2002, when the longwall unit is added.

The pond elevation will be managed whereas Pond #11 will not discharge. Since Pond #11 has over 1.0 million gallons in reserve and draw rates exceed the sewage treatment inflow, Pond elevations will easily be controllable through inflow pumping regulation. A simple float valve will stop inflow pumping at a point whereas the Pond is at 90%, thus leaving a 100,000 gallon reserve.

If you have any other questions, please call.

Sincerely,

AMERICAN ENERGY CORPORATION



Mark A. Bartkoski  
Century Mine Project Manager

MAB:arw

Southeast District Office

2195 Front Street  
Logan, OH 43138

TELE: (740) 385-8501 FAX: (740) 385-6490

Bob Taft, Governor  
Christopher Jones, Director

September 18, 2001

RE: BELMONT COUNTY  
AMERICAN ENERGY CORP. - CENTURY MINE  
(FORMERLY BENNOC, INC. ALLISON MINE)  
PERMIT TO INSTALL #06-6555  
CORRESPONDENCE (IWW)

Mr. Don Brafford  
Jack A. Hamilton and Assoc., Inc.  
342 High Street  
P.O. Box 471  
Flushing, Ohio 43977

Dear Mr. Brafford:

I have reviewed Permit to Install (PTI) application #06-6555 for the pump stations and extended aeration wastewater treatment plant proposed for the Century Mine. The following revisions and/or clarifications are necessary before processing can continue.

1. The discharge from the wastewater treatment system will be assigned outfall number 601 and will be limited in the permit to the following effluent limitations. The effluent concentration and loads (30 day) table on page B3-1 of the PTI application must be revised to reflect that the treatment plant can meet these limits.

PARAMETER	SUMMER	WINTER
cBOD <sub>5</sub>	10 mg/l	10 mg/l
TSS	12 mg/l	12 mg/l
Ammonia	1.0 mg/l	3.0 mg/l
Fecal Coliform	1000 #/100 ml	--
Dissolved Oxygen	6.0 mg/l min.	6.0 mg/l min.
Residual Chlorine	0.019 mg/l	--
pH	6.5-9.0	6.5-9.0

2. In order to avoid a discharge to the waters of the state, this treatment system is designed to discharge into an existing pond that is used in the closed loop of water supply for the dust control in the underground mine. Although this treatment plant is designed to properly treat sewage so that the effluent is protective of human health and aquatic life, and the effluent is diluted with 1 million gallons of water from the watershed that is held in the pond, Ohio EPA would like the company to consider applying for a permit in the near future to discharge the wastewater treatment plant effluent, so as to not include this effluent in the dust control process for the long term. I have attached the appropriate forms.

3. Both pump stations "A" and "B" must be provided with valve pits outside the pump station. Please refer to the detail on page 33 of the Ohio EPA publication Sewage: Collection, Treatment and Disposal ("The Green Book"). Revise the pump station drawing detail.
4. Specify what Nema enclosure will be used for the pump station control panels.
5. It is suggested that the paragraph 15 on page B3-3 be revised to include sludge disposal at a public wastewater treatment plant in the event the sludge is too liquid for landfill disposal.
6. Provide an explanation of the sizing of the effluent pump station pumps.
7. Submit transfer papers transferring ownership from Bennoc to American Energy Corp. so that the NPDES permit can be issued to the correct company.
8. On September 11, 2001, I inspected the mine site. The proposed drainage controls for the clean coal silo and train load out areas are not clear. Provide details on how the drainage in these areas will be controlled and what steps will be taken to prevent fine coal dust from causing pollution problems. Point source discharges are not recommended for these areas as this would necessitate a revision to the NPDES permit including the antidegradation process.

Please submit 1 set of any revised pages, 3 complete sets of plans, 2 sets of specifications, and 1 additional copy of all PTI forms. If you have any questions, please contact me at (740) 380-5284 at your convenience.

Sincerely,



Ms. Abbot Stevenson  
Environmental Engineer  
Permits and Enforcement Section  
Division of Surface Water

AS/dh

c: Eric Grim, American Energy Corp.  
c: AS file

Plan  
Lift Station Plans  
Gravity Line  
Hydraulic Profile

XXXXXXXXXXXXXXXXXXXXXXXXXXXX  
SEWERAGE  
APPROVED  
OHIO ENVIRONMENTAL PROTECTION AGENCY  
AS EVIDENCED BY COPY OF  
LETTER OF APPROVAL  
HERETO ATTACHED  
XXXXXXXXXXXXXXXXXXXXXXXXXXXX

Plans & Elevations

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06-6555 Revisions  
PAID  
Amount 1149.00 Date 5-11-01  
Check - 10788 Date 5-10-01

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					CHECKED BY	DMB
No.	DATE	DESCRIPTION	BY	CHKD	DATE	05-07-2001
					COMM. NO.	625S
					SHEET	
					CS	